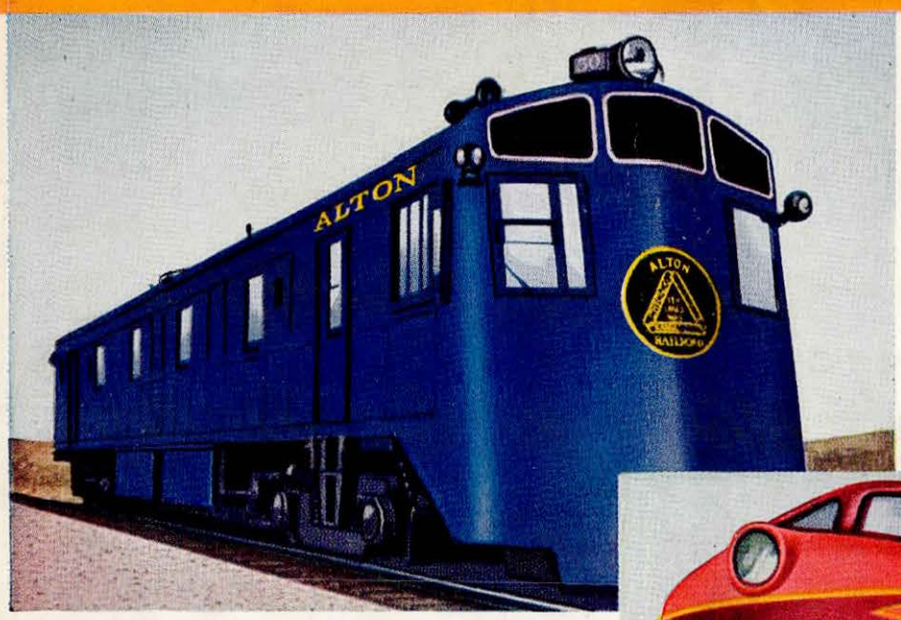
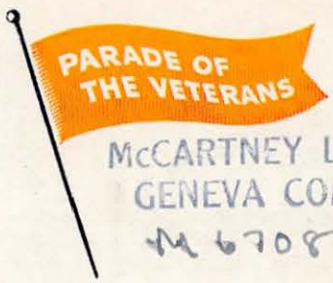
MARCH 2, 1946

Railway Age

Founded in 1856





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The difference between "No. 50" that powered the first Abraham Lincoln *in 1936, and the 4,000 H. P. GM Diesel of 1945 tells a story that spans the evolution of Diesel power.*

TRULY A MILEAGE VETERAN!

Old "No. 50" with 1,715,118 miles behind it is still in regularly scheduled service.

The *Abraham Lincoln,* one of the early Diesel-powered trains, was put in service between Chicago-St. Louis-Kansas City in 1936.

As of October 31, 1945, the General Motors Diesel passenger locomotive which powered that early train had turned in 1,715,118 miles, both as a single unit and in tandem, after 1940, with an "A" unit.

In fact, the Alton is regularly operating four General Motors Diesel Locomotives—including "No. 50" — on ten featured trains.

General Motors-Electro-Motive engineering, construction and design; studied care and maintenance on the part of the railroad, and a well distributed parts service — these have contributed largely toward setting up this splendid record.

GENERAL MOTORS LOCOMOTIVES

YOUTHFUL IN STAYING POWER • VETERANS FOR PERFORMANCE

ELECTRO-MOTIVE DIVISION

GENERAL MOTORS CORPORATION LA GRANGE, ILL.

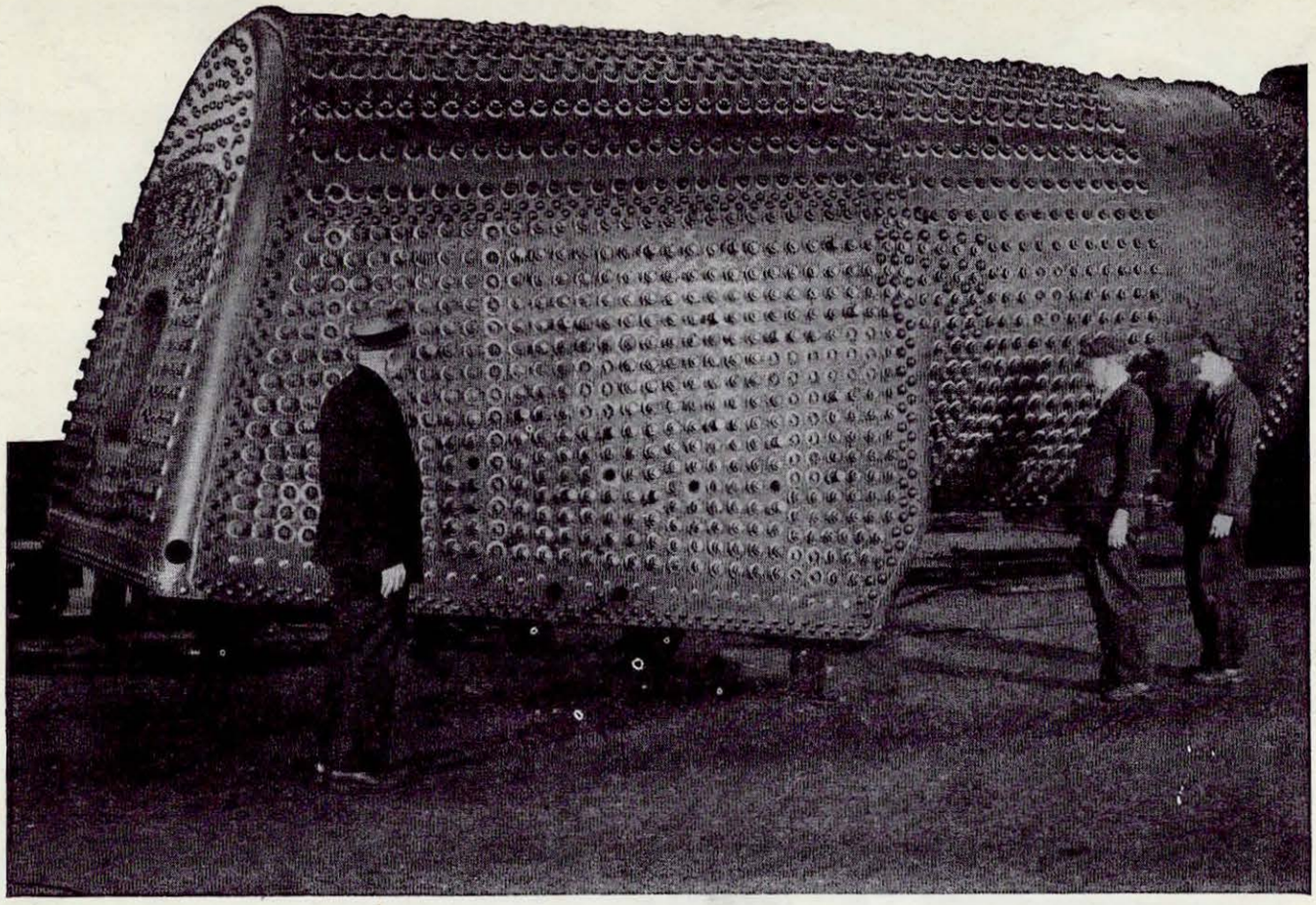
93%

of all Burlington freight cars ordered last year are equipped with

UNIT TRUCKS

In 1934 *Burlington's Engineered Planning introduced the first Diesel-powered streamlined train, giving America a new era of high speed transportation.*

In 1941 *Burlington was one of the pioneers in the adoption of the interlocked, self-aligning Unit Brake Beam, the beginning of a new era of freedom from brake rigging failures, and the end of a major hazard in freight train operation.*



Bethloc has what it takes

for firebox service today

You can be sure of superior performance . . . and economy, too . . . when you equip your heavy-duty locomotives with Bethloc Firebox Plates. For Bethloc Plates have the stamina to *keep* locomotives out on the road, despite heavy hauls and tough schedules.

Bethloc Plates are made with great care from special low-carbon steel. With their dense, uniform grain structure, general toughness and unusual ductility, they have what it takes to resist the fatigue stresses caused by vibration and sudden temperature variations. Moreover, Bethloc Plates are but slightly affected by aging. And they fully meet railroad requirements for strength, elasticity and elongation.

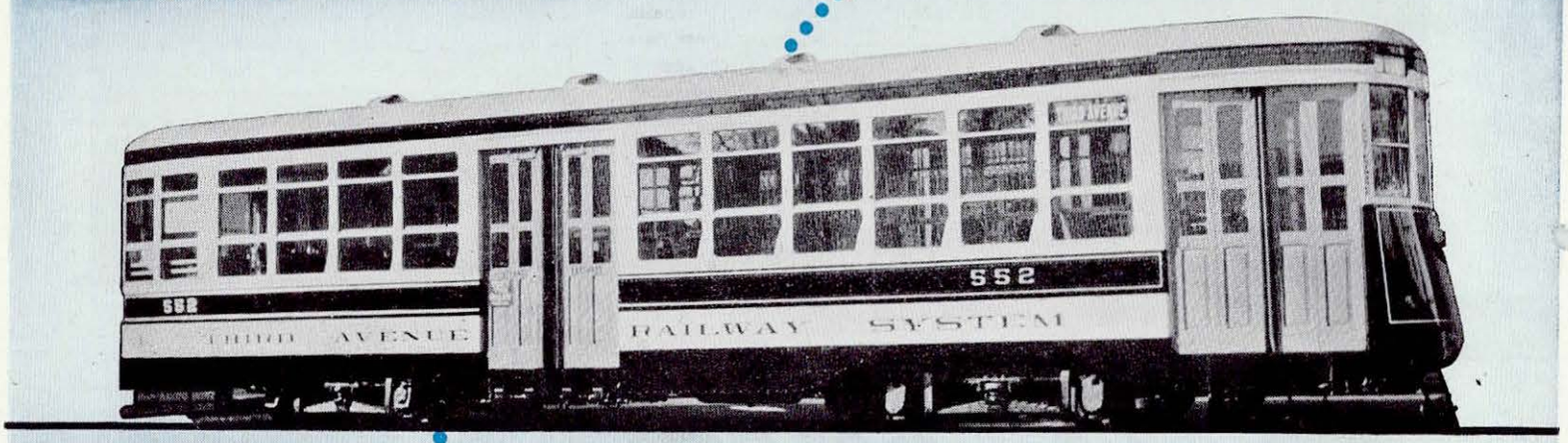
Yes, Bethloc Plates are well worth using. Specify Bethloc at every opportunity—for new locomotives and those undergoing repair.

Bethloc BETHLEHEM STEEL

FIREBOX PLATES

Published weekly by Simmons-Boardman Publishing Corporation, 1309 Noble Street, Philadelphia, Pa. Entered as second class matter, January 4, 1933, at the Post Office at Philadelphia, Pa., under the act of March 3, 1879. Subscription price $6.00 for one year U. S. and Canada. Single copies, 25 cents each. Vol. 120, No. 9.

WHAT ONE TRANSPORTATION MAN TELLS ANOTHER . . . . . AFTER 8 YEARS EXPERIENCE



The letter on the facing page was addressed by Mr. Frank T. Ward, Superintendent of Bus Maintenance, Surface Transportation Corp., Subsidiary of the Third Avenue Railway System, New York, to the principal engineer of a large car builder, in answer to queries about experience with Alcoa Aluminum. The subheadings and the postscript are ours—otherwise, Alcoa prefers to let the letter speak for itself . . .

Dear Sir:

Acknowledging yours of . . .

We have a large group of cars in service that we built ourselves in 1938. The bodies and framing of these were aluminum alloy throughout, except the bolsters. We used aluminum foil insulation between roof panels and ceiling. Side sheets were alloy aluminum. No trouble whatever has been experienced with these cars, despite the fact that they were longer than our standard cars and had special control and motors for high acceleration.

PERFORMANCE! There was no tendency to buckle except at one corner panel and this was remedied at negligible cost. No ill effects whatever developed. No drumming ever occurred, either when the cars were new or at the present time.

PAINTING Our paint practice calls for a repaint about every two years on all of our cars. These cars would go longer without repainting. The only special requirement is to insure clean metal at first painting and the proper zinc-chromate primer as specified by Alcoa.

No special treatment is required for the back of panels, other than a properly applied coat of the zinc-chromate primer.

EXTRUDED TRIM These cars also have nothing but aluminum trim for the interiors and aluminum sash. Extruded aluminum shapes facilitate the trim problem greatly because of the large variety of such shapes available that have a true architectural appearance.

WEIGHT These cars weigh empty, including trucks, motors, brake and power controls, 32,415 pounds. They are double end cars, end entrance, center exit. The actual body shell (43'-6½") without such items as seats, control equipment and other items that are accessories, weighs 4,000 pounds. The finished car body weight is 17,215 pounds. The trucks and motors make up the balance of 15,200 pounds. These weights were taken with extreme accuracy.

They contain about 7,000 pounds of 3S aluminum alloy.

It may also interest you to know that we built some cars of other material at the same time which weighed 35,675 pounds empty. Incidentally, they contained 900 pounds of aluminum alloy trim such as stanchions, post trim, sash, etc. Under identical loading for both the aluminum alloy and other cars, the deflection midway between bolsters was 0.145 inches for the aluminum car against 0.281 inches for the other one.

SASH THAT WORKS! You may also be interested in the sash. So far as I am aware, our cars had the first sash designed specifically to meet the standee vision problem. They were made to our design by Hunter Sash of unpainted 53S-T5 alloy. We now have about 20,000 of them in service, and believe it or not, you can raise or lower any of them any time, though some have been in service about 10 years. Each sash is made by welding four pieces together at the corner bevels. I have specified them for the 700 buses we now have on order. As they can be reglazed in place, they need never be taken out for glazing, and as the frames do not come apart, we seem to have an everlasting window that will always work. I believe you will agree that such a sash ranks with the atomic bomb as an extraordinary advance.

BUS WEIGHT SAVING Needless to say, all of our 700 new bus bodies will be aluminum alloy throughout. These buses will weigh (actually do weigh) 16,500 pounds empty, for a 44-passenger bus meeting the New York City requirements. I have other types in service here, but the lightest competitor among them weighs over 18,600 pounds.

I have gone into considerable detail, perhaps more than you need, but the performance of the aluminum alloys on our property has been outstandingly satisfactory and very little heralded, and it is a pleasure for me to endeavor to give it the credit it has justly earned here in about 8 years of severe car service and 5 years of extremely severe bus service, years which included the world war and its maintenance handicaps.

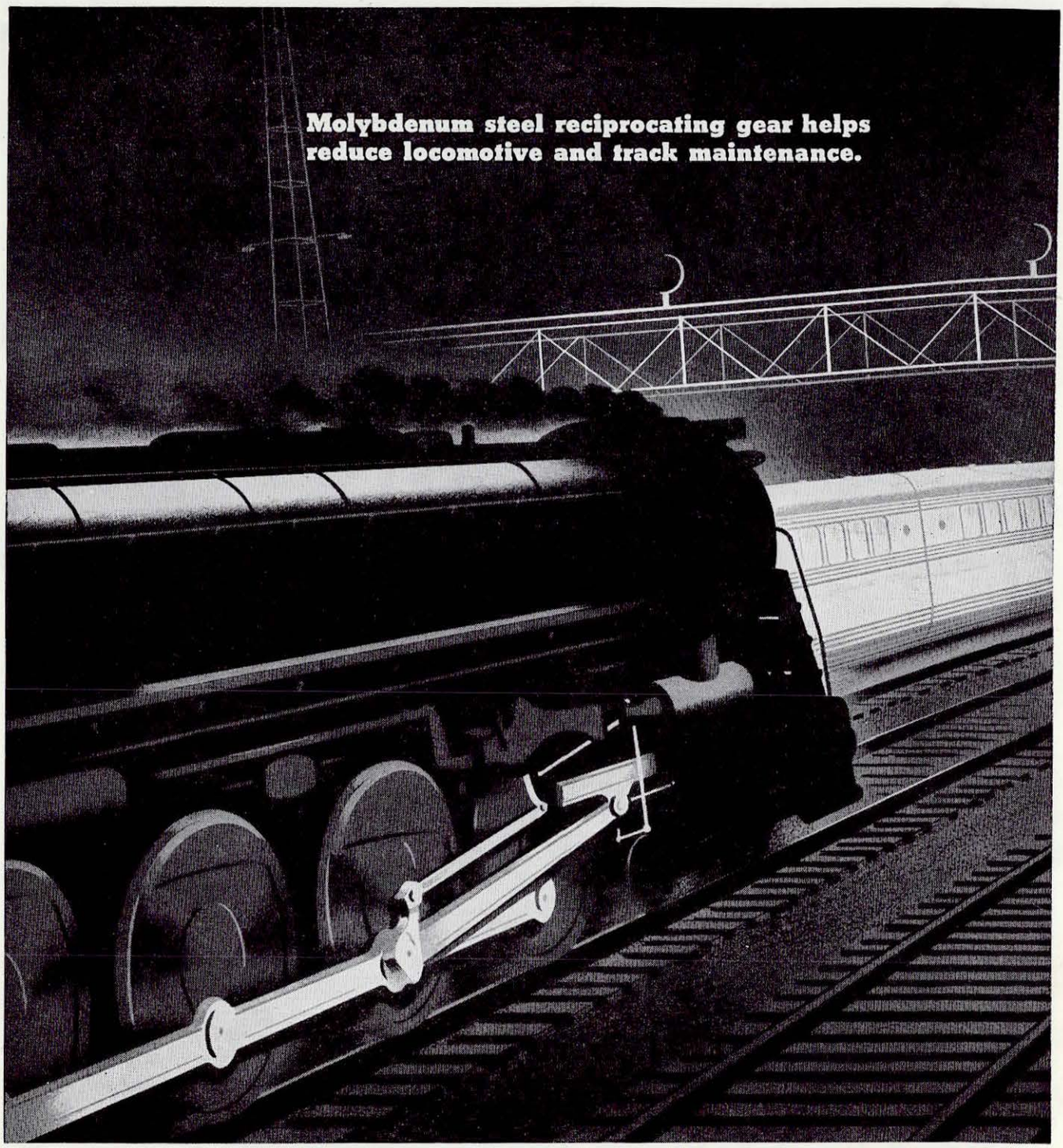
Yours very truly,

Frank T. Ward

Sup't of Bus Maintenance

ALCOA *P.S.* Alcoa Aluminum offers you all of these and many other advantages, for anything that rolls. Consult our nearest sales office, or write ALUMINUM COMPANY OF AMERICA, 2178 Gulf Bldg., Pittsburgh 19, Pa.

ALCOA FIRST IN ALUMINUM REG. T. M.



MOLYBDIC OXIDE—BRIQUETTED OR CANNED • FERROMOLYBDENUM • "CALCIUM MOLYBDATE"
CLIMAX FURNISHES AUTHORITATIVE ENGINEERING DATA ON MOLYBDENUM APPLICATIONS.

Climax Molybdenum Company

500 Fifth Avenue · New York City

MOLY

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ALCOA FIRST IN ALUMINUM REG. T. M.

NE... that is NEWS!

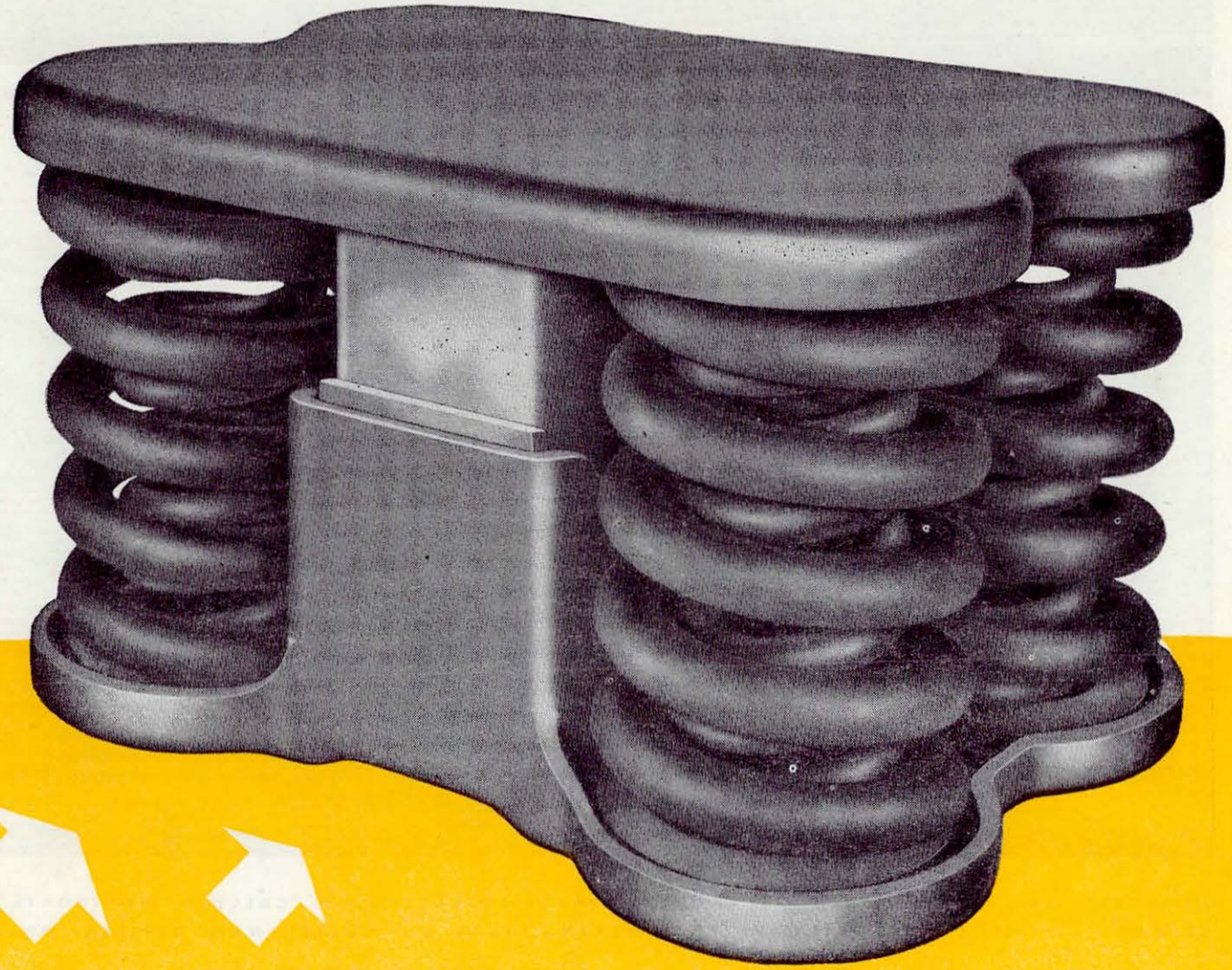
ANNOUNCING

THE NEW A·S·F *Ride-Control* PACKAGE

...a self-contained, self-controlled unit with soft, long-travel springs. It gives existing freight cars far better riding qualities than ever thought possible with trucks of conventional design.

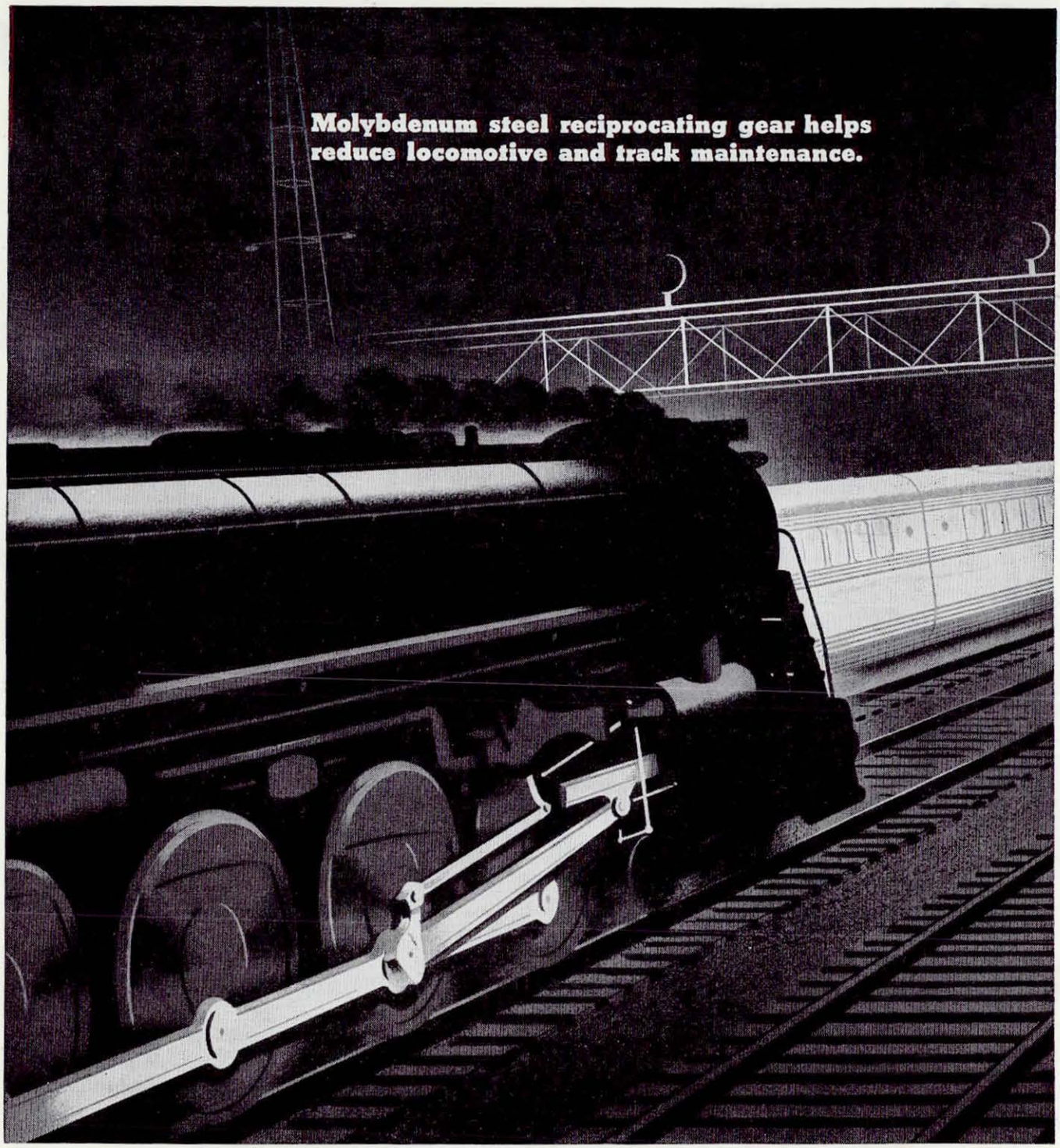
Gives New Meaning to Your Reconversion Program

Controls the ride at All Loads...
AT ALL SPEEDS!



Get all the facts
from your A.S.F. Representative

AMERICAN STEEL FOUNDRIES



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CLIMAX FURNISHES AUTHORITATIVE ENGINEERING DATA ON MOLYBDENUM APPLICATIONS.

Climax Molybdenum Company

500 Fifth Avenue · New York City

MOLY

Red Lead NEUTRALIZES ACIDS that Speed Up Rusting

Every maintenance engineer knows that Red Lead has long been the outstanding protective paint for metal.

But did you know that one of the important reasons is the ability of Red Lead to counteract the acid conditions which are recognized as accelerators of rust?

Structural steel is usually exposed to acid environments. This is so because acid-forming compounds are produced by certain gasses and smoke in contact with moisture. Pollution of waterways also results in acidity.

Moreover linseed oil, synthetic resin varnishes and other commonly used paint vehicles *themselves* produce organic acids in the normal process of aging. Many of these also accelerate corrosion.

When Red Lead is the pigment in a protective paint, rust-causing acidity is kept under control. Actually, a "controlled" acid level is maintained in the paint film. This is a singular property of Red Lead and also contributes to the utmost in film flexibility, impermeability and long life.

* * *

The value of Red Lead as a rust preventive is most fully realized in a paint where it is the only pigment used. However, its rust-resistant properties are so pronounced that it also improves any multiple pigment paint. No matter what price you pay, you'll get a better paint for surface protection of metal if it contains Red Lead.

* * *

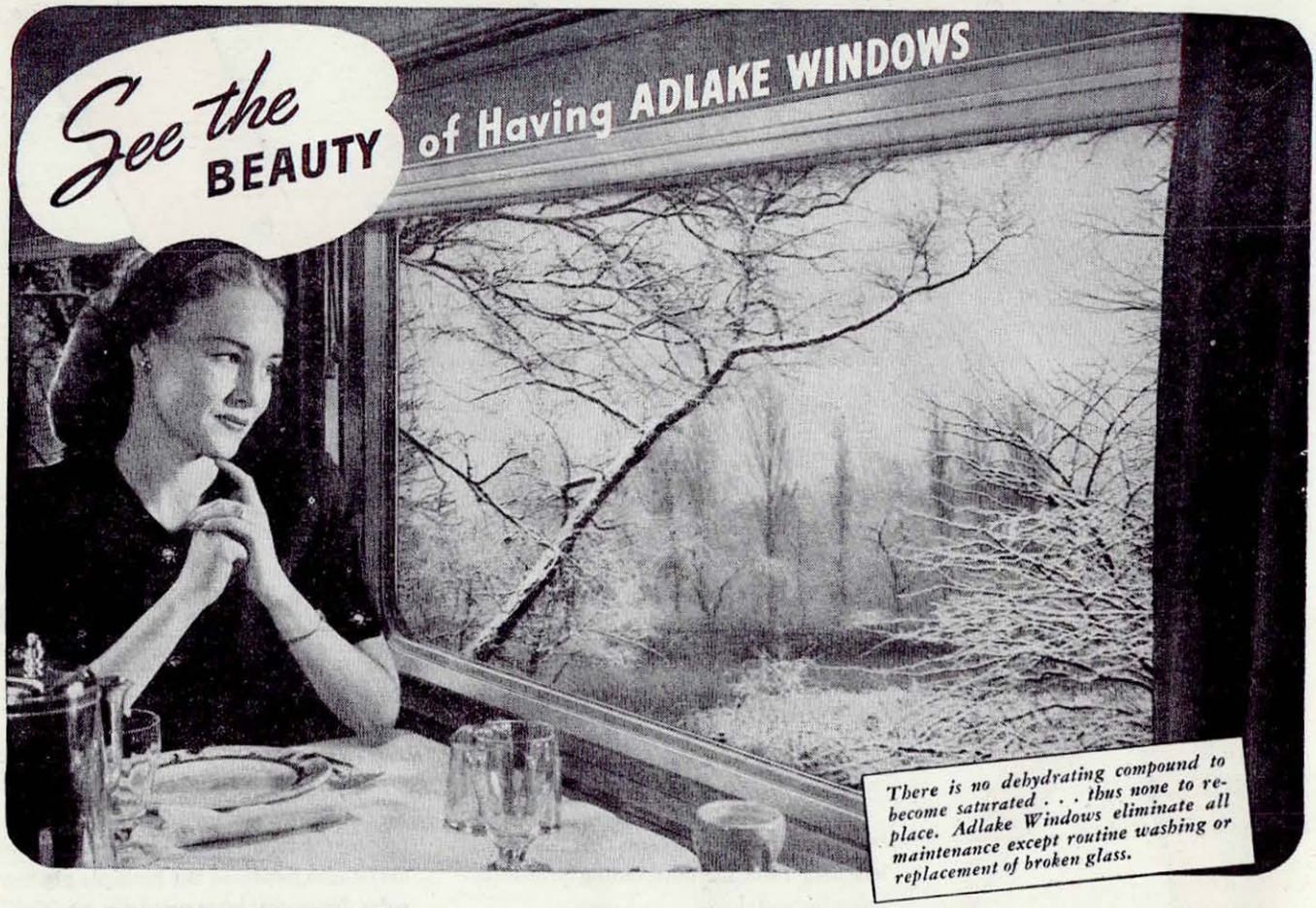
Write for New Booklet—"*Red Lead in Corrosion Resistant Paints*" is an up-to-date, authoritative guide for those responsible for specifying and formulating paint for structural iron and steel. It describes in detail the scientific reasons why Red Lead gives superior protection. It also includes typical specification formulas. If you haven't received your copy, address nearest branch listed below.

* * *

The benefit of our extensive experience with metal protective paints for both underwater and atmospheric use is available through our technical staff.

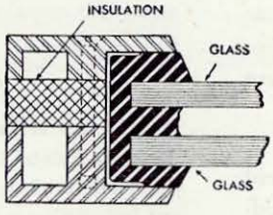
NATIONAL LEAD COMPANY: New York 6; Buffalo 3; Chicago 80; Cincinnati 3; Cleveland 13; St. Louis 1; San Francisco 10; Boston 6, (National Lead Co. of Mass.); Philadelphia 7, (John T. Lewis & Bros. Co.); Pittsburgh 30, (National Lead Co. of Pa.); Charleston 25, W. Va. (Evans Lead Division).

Dutch Boy Red Lead

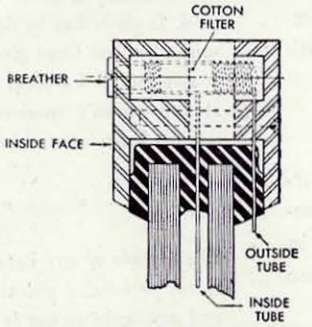

See the BEAUTY of Having ADLAKE WINDOWS
There is no dehydrating compound to become saturated . . . thus none to replace. Adlake Windows eliminate all maintenance except routine washing or replacement of broken glass.

CONSTRUCTION DETAILS

Both frames of Adlake Sash are insulated from each other. This prevents cold from traveling to inside of unit—prevents frosting.



Note inside and outside "breather" tubes. These permit air between panes to adjust to changes in temperature and altitude—prevent clouding without use of a dehydrant.



Adlake CURTAINS . . . should be included. They never shake, rattle or jangle. Swivel tips prevent change in length; rubber shoes stop noise and creeping. Ask for details about Adlake Curtains . . . Curtain Fixtures . . . Sectional Diaphragms . . Vestibule Curtains.

. . . and with no fuss, no maintenance!

A beautiful girl . . . a beautiful scene . . . and beautiful, clear, unclouded windows. That's the beauty of having Adlake Double-Glazed Sash Units. You can easily SEE their advantages . . . so can your passengers.

Adlake Windows assure visibility at all times unaffected by fog or frost. An exclusive principle—the Adlake Breather—permits the air between the two panes to adjust quickly to temperature and altitude changes.

Adlake Double-Glazed Windows are again furnished in aluminum and can be aluminited if desired. They are designed and produced for new cars or reconditioning present equipment, and to standards that have won their reputation for superiority throughout years of service.

Write for prices and details . . . and specify Adlake.

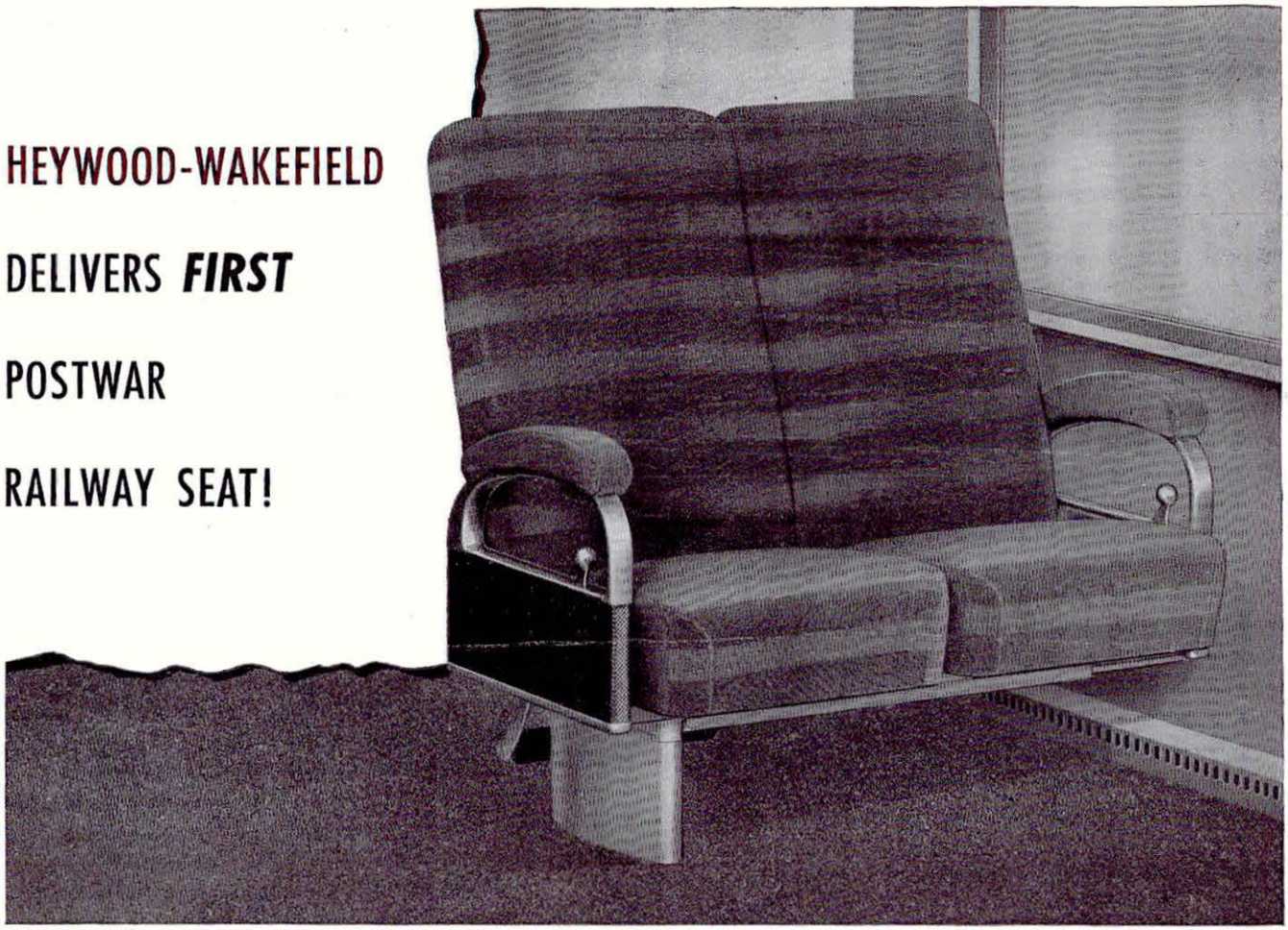
Adlake TRADE MARK

THE ADAMS & WESTLAKE COMPANY

ESTABLISHED IN 1857 — ELKHART, INDIANA — NEW YORK · CHICAGO

ADLAKE RAILWAY CAR EQUIPMENT, FITTINGS and SPECIALTIES • DOUBLE-GLAZED ALUMINUM WINDOWS • WINDOW CURTAINS • VESTIBULE CURTAINS • SECTIONAL DIAPHRAGMS • LUGGAGE RACKS • ASH RECEPTACLES • HARDWARE

HEYWOOD-WAKEFIELD DELIVERS *FIRST* POSTWAR RAILWAY SEAT!



Features of the New H-W Seat for New York Central

- *Stainless steel pedestal*
- *Patented rotating mechanism*
- *Spring-filled cushions and back*
- *Back adjustable to 9 positions*
- *Adjustable, Vynil covered footrest*
- *Aluminum arm rest with rubber-filled arm cap*

Illustrated is the seat on which delivery has just been made to New York Central System for their new equipment.

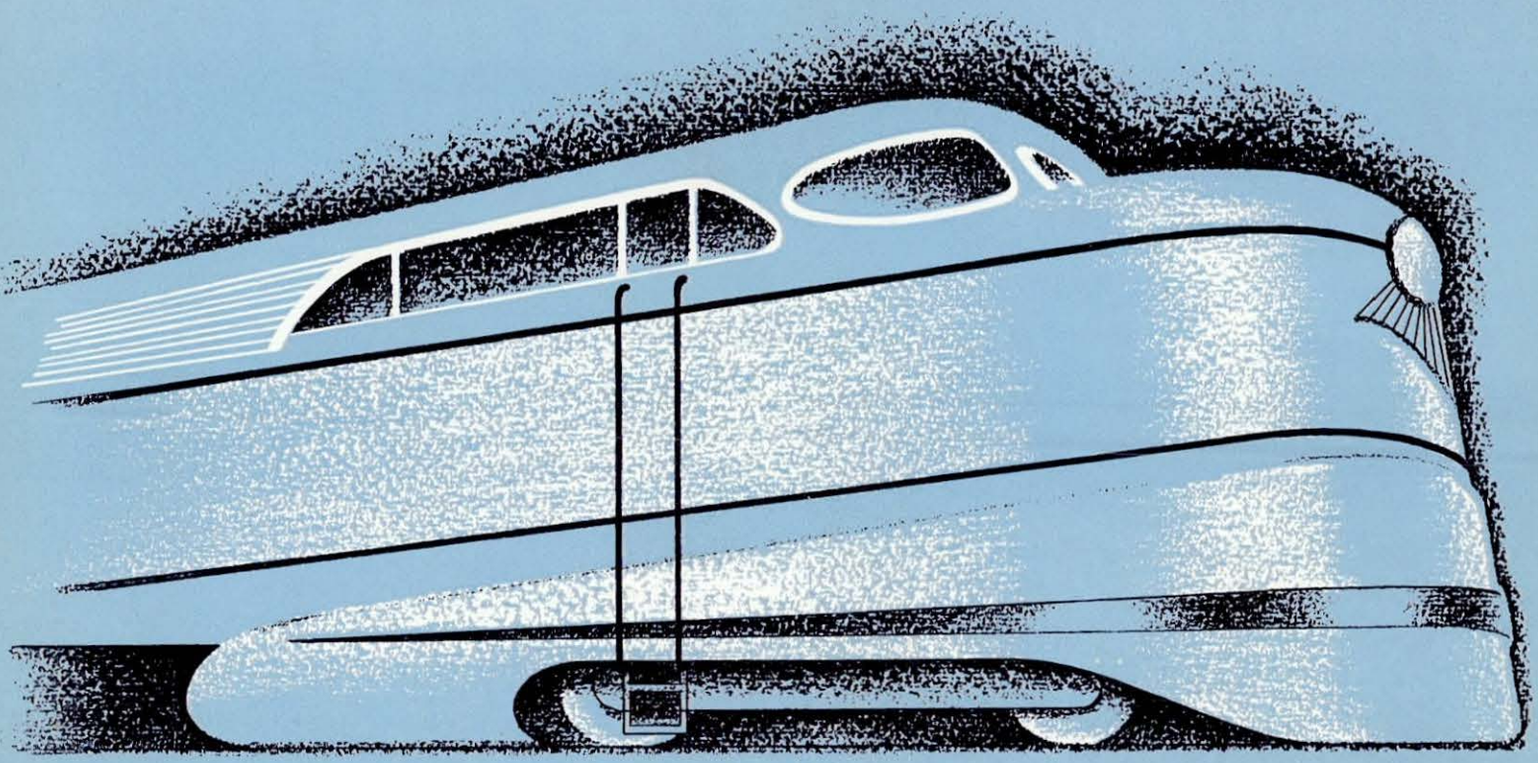
In this seat the recommendations of America's foremost anthropologist have been adapted to the specifications of the railroad's own designer to assure maximum comfort in conformity with the space, weight and decorative requirements of the new cars.

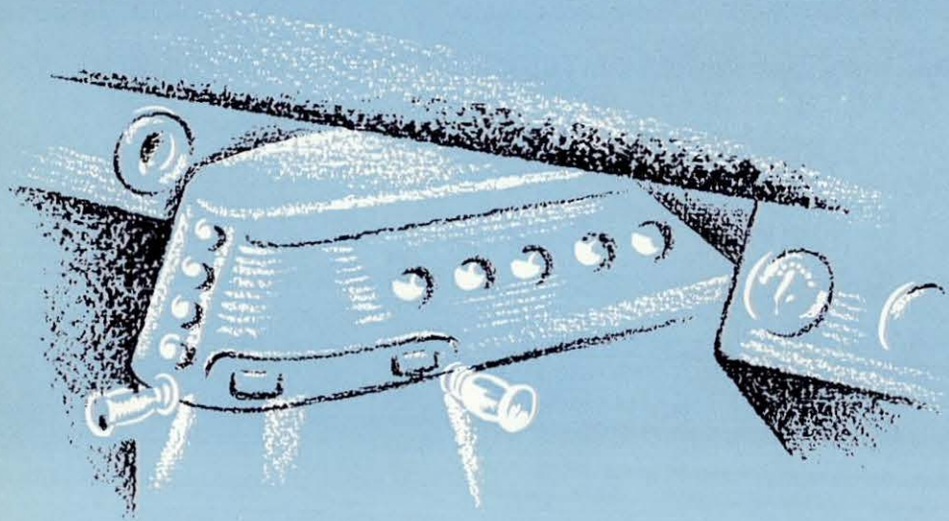
Here, in short, is a typical example of the thorough-going cooperation offered by our engineering staff—and of the practical advantages of our completely integrated manufacturing facilities which rank among the largest of their type in the country.

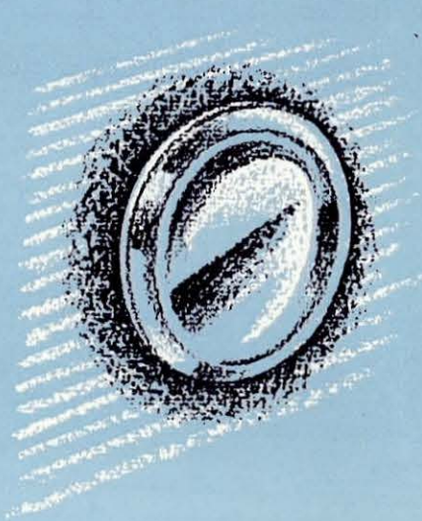
HEYWOOD-WAKEFIELD
EST. 1826

Transportation Seating Division
Gardner, Massachusetts

EXPECT A SUPER DIESEL-ELECTRIC







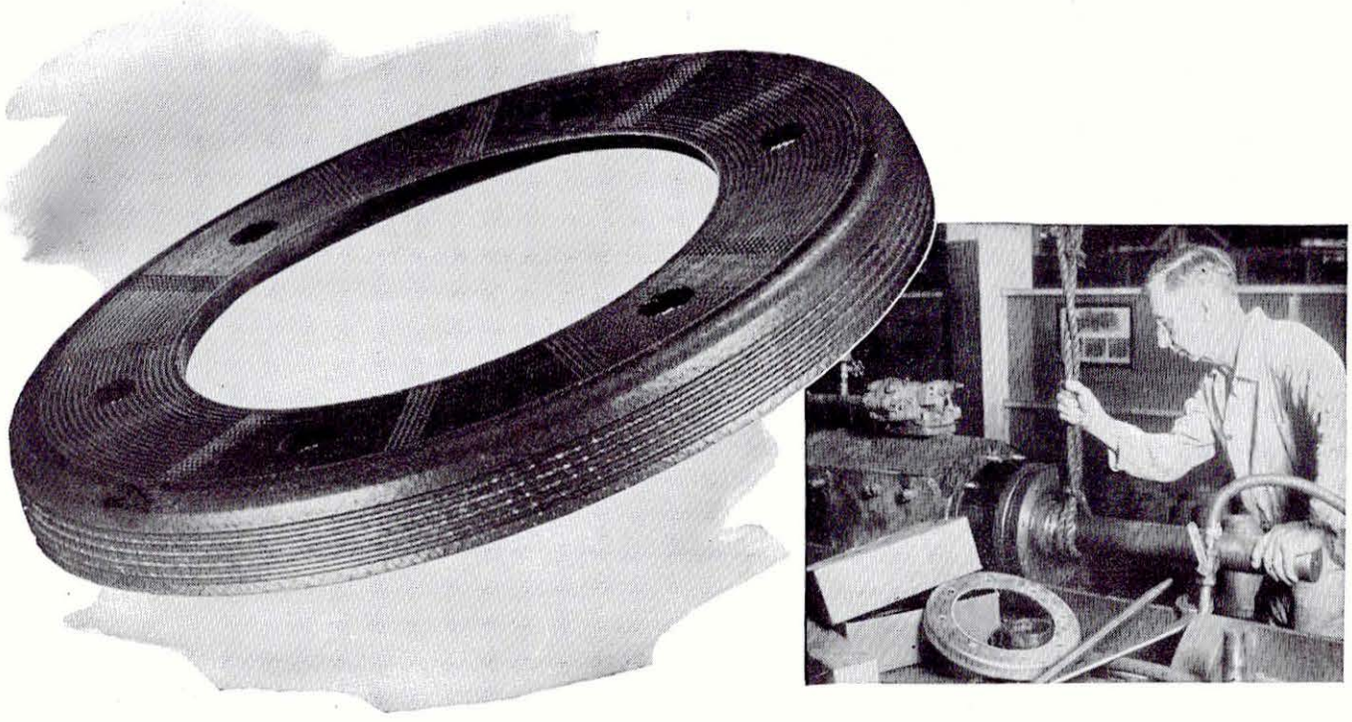
FROM

More than a dream on a drawing board are the sleek, powerful, super diesel-electrics soon to roll from the production lines of America's most modern locomotive shop. These locomotives are specifically designed to meet every motive-power demand for road passenger and freight service—to haul more passenger- and ton-miles in less time and at less cost than any locomotives ever before built. The answer to your problem of meeting increased peacetime competition, these super diesel-electrics will provide motive power that has *greater* earning power.

AMERICAN LOCOMOTIVE AND GENERAL ELECTRIC

113-157-9580

New Power Reverse Gear Packing Cup Gives POSITIVE SEAL from the start!



Here's one packing cup you can depend on for immediate, effective sealing on power reverse gears.

The ribbed lip provides a positive seal *on application* . . . without wearing in. And, because it is especially compounded to provide exceptional resistance to heat, wear and oil, this new J-M Moulded Packing Cup outwears other packings of its type in modern air and steam operation.

For information about J-M Moulded Packing Cups for power reverse gears, and other services, write Johns-Manville at New York, Chicago, Cleveland, St. Louis or San Francisco.

The J-M Moulded Packing Cup is one of many specialized railroad packings furnished under the J-M Standardized Packing Plan. This "centralized packing control" has saved time and money for leading American railroads for over 25 years. Write the nearest J-M Office for details.

Johns-Manville

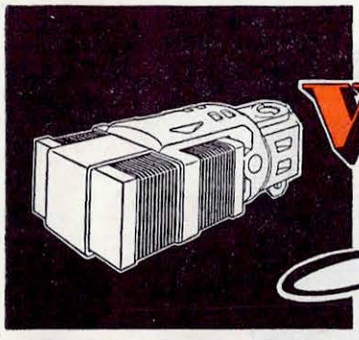
88 YEARS OF SERVICE TO TRANSPORTATION

"Me working on the railroad? It's a rest to ride these TWIN CUSHION trains."

PROGRESSIVE AMERICAN RAILROADS equipping their newest and finest passenger cars with Waughmat Twin Cushions:

New York Central
Pennsylvania
Pullman Company
Erie
Union Pacific
Missouri Pacific
Atlantic Coast Line
Southern Pacific
Burlington
North Western
Louisville & Nashville
New Haven
Texas & Pacific
Pere Marquette
Northern Pacific
Great Northern
Seaboard
St. Louis-San Francisco
Chicago & Eastern Illinois
Norfolk & Western
Wabash
Illinois Central
Gulf, Mobile & Ohio
Western Pacific
Canadian Pacific
Rock Island
Boston & Maine
Maine Central

MODERNIZE with



WAUGHMAT ★ *Twin Cushions*

ELIMINATE JERKS AND JARS

★ CAN BE APPLIED TO OLD OR NEW CARS

WAUGH EQUIPMENT COMPANY, New York · Chicago · St. Louis · Canadian Waugh Equipment Company: Montreal

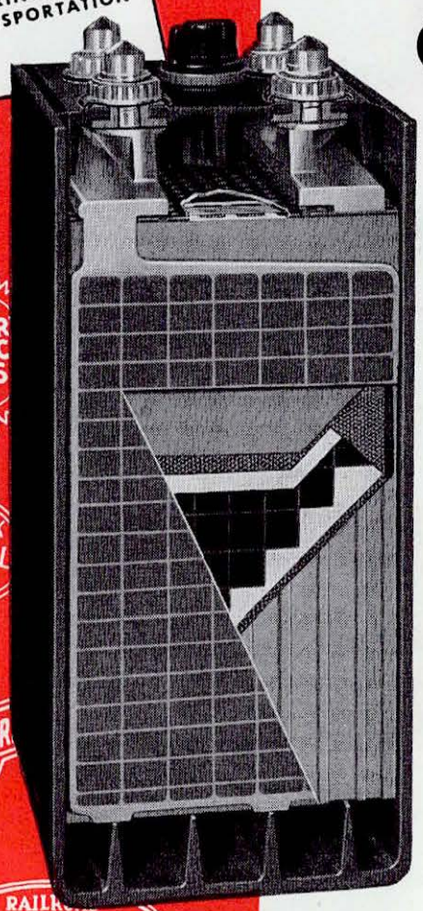
MEMO

Why aren't we using Kathanode batteries?

SUPERINTENDENT, TRANSPORTATION

Do you know why

THE TREND IS TOWARD GLASS MAT DESIGN?



Gould Kathanode construction was a startling innovation when introduced to American industry in 1925. Since then the demonstrated superiority of glass mats has resulted in wide-spread use of this form of positive plate protection.

During its 21 years of experience in building glass mat batteries, Gould has added many improvements to the original Kathanode design. Incorporated in the now-famous Kathanode Unit, and still exclusively Gould, are a specially designed grid, long-lasting Black Oxide active material, mats of layered spun-glass, and the Unit-Seal envelop that minimizes short circuits and internal power losses.

Gould research is constant, so look to Gould for leadership in battery developments. Write Dept. 153 for Catalog 800 on Gould Kathanode Glassklad Batteries for Car-lighting and Air-conditioning Service.

GOULD

GLASSKLAD CONSTRUCTION

KATHANODE

GOULD STORAGE BATTERY CORPORATION, Depew, N. Y.

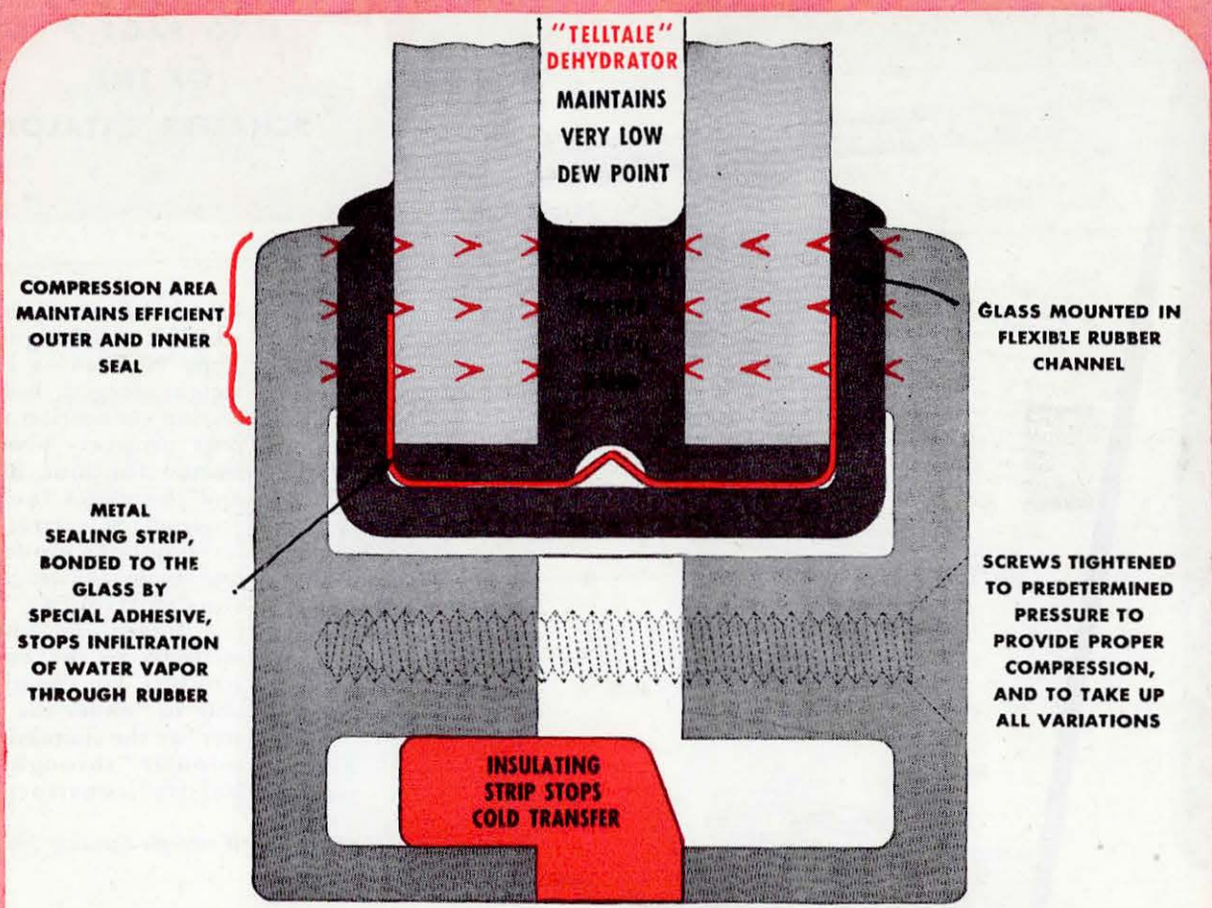
Factories: Atlanta • Boston • Chicago Dallas • Depew • Leavenworth • Los Angeles • North Bergen • Rock Island Saint Paul • Salem • Sioux City • Zanesville

VAPOR-SEALED!!

For No Fog . . No Film . . No Frost

New Edwards DOUBLE GLAZED Unit

Built to Last for the Life of the Car


"TELLTALE" DEHYDRATOR
MAINTAINS VERY LOW DEW POINT
COMPRESSION AREA MAINTAINS EFFICIENT OUTER AND INNER SEAL
GLASS MOUNTED IN FLEXIBLE RUBBER CHANNEL
METAL SEALING STRIP, BONDED TO THE GLASS BY SPECIAL ADHESIVE, STOPS INFILTRATION OF WATER VAPOR THROUGH RUBBER
SCREWS TIGHTENED TO PREDETERMINED PRESSURE TO PROVIDE PROPER COMPRESSION, AND TO TAKE UP ALL VARIATIONS
INSULATING STRIP STOPS COLD TRANSFER

NO FOG

Vapor Seal positively and permanently stops all mechanical leakage and infiltration of water vapor into dead air cell.

NO FILM

No repeated moisture formations (fogging) to progressively build up objectionable scum on inner surfaces of glass.

NO FROST

No Metal Contact From Outside To Inside.

Edwards advanced engineering now brings to the railroads a highly developed and extremely sturdy double glazed unit affording absolutely TOP performance. Consider these features . . . crystal-clear window brilliance that age will not dim . . . elimination of sash maintenance . . . highly efficient insulation of car interior . . . a Sash Unit built to last for the life of the car. For Complete Information . . . write to O. M. Edwards Co., Inc., Syracuse, N.Y.

EDWARDS SASH

THE EYES OF TRANSPORTATION

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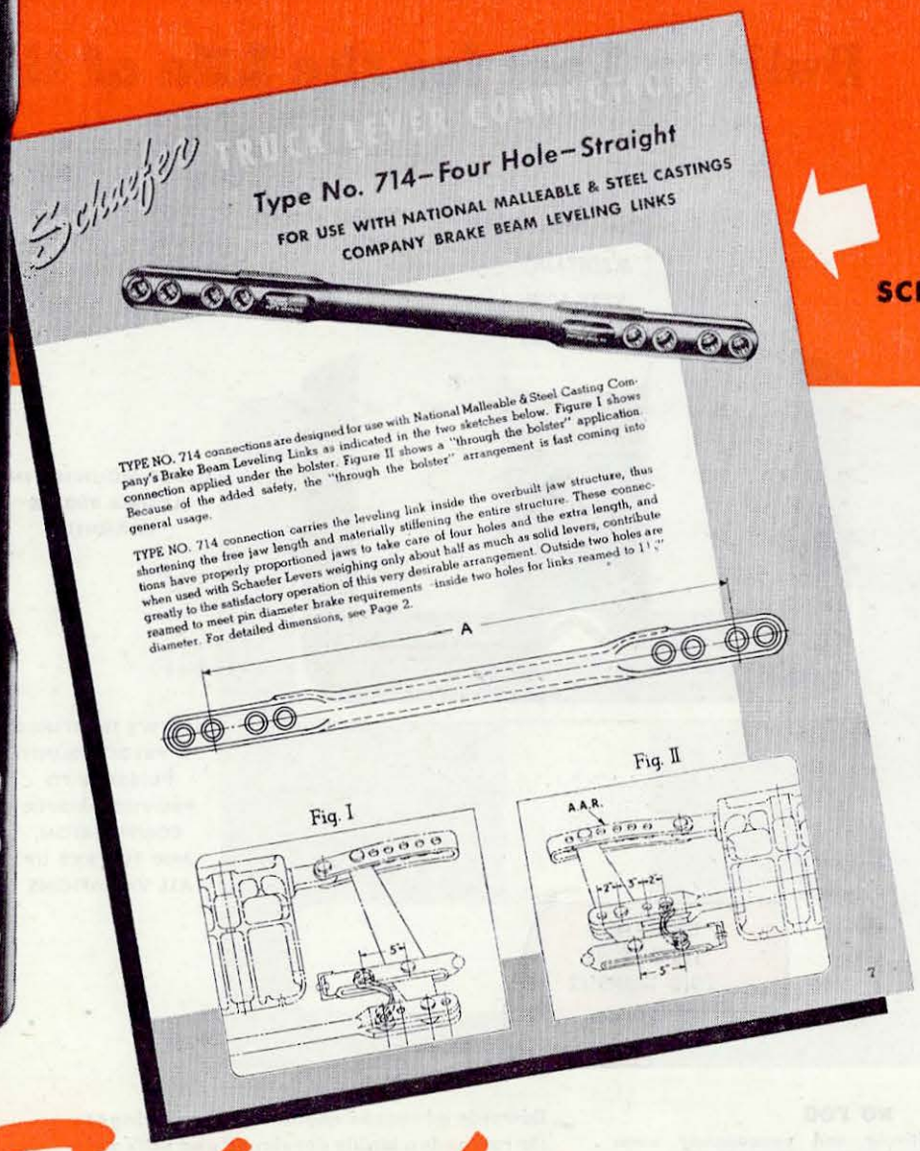
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TYPE NO. 714 connections are designed for use with National Malleable & Steel Casting Company's Brake Beam Leveling Links as indicated in the two sketches below. Figure I shows connection applied under the bolster. Figure II shows a "through the bolster" application. Because of the added safety, the "through the bolster" arrangement is fast coming into general usage.
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A
Fig. I
Fig. II
A.A.R.
7

JUST TURN TO PAGE 7 OF THE SCHAEFER CATALOG

It's ideal for the job for which it was designed—Type No. 714—a light weight, forged, hollow section connection with jaws properly proportioned for four holes and the extra length required. It carries the leveling links inside the over-built jaw structure, thus shortening free jaw length and adding stiffness to the entire structure. Equally adaptable to "under the bolster" or the increasingly popular "through the bolster" construction.

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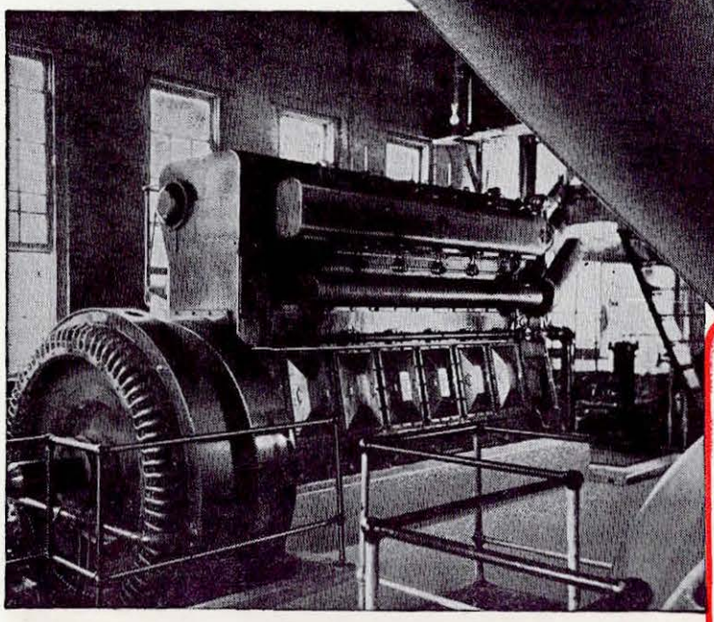

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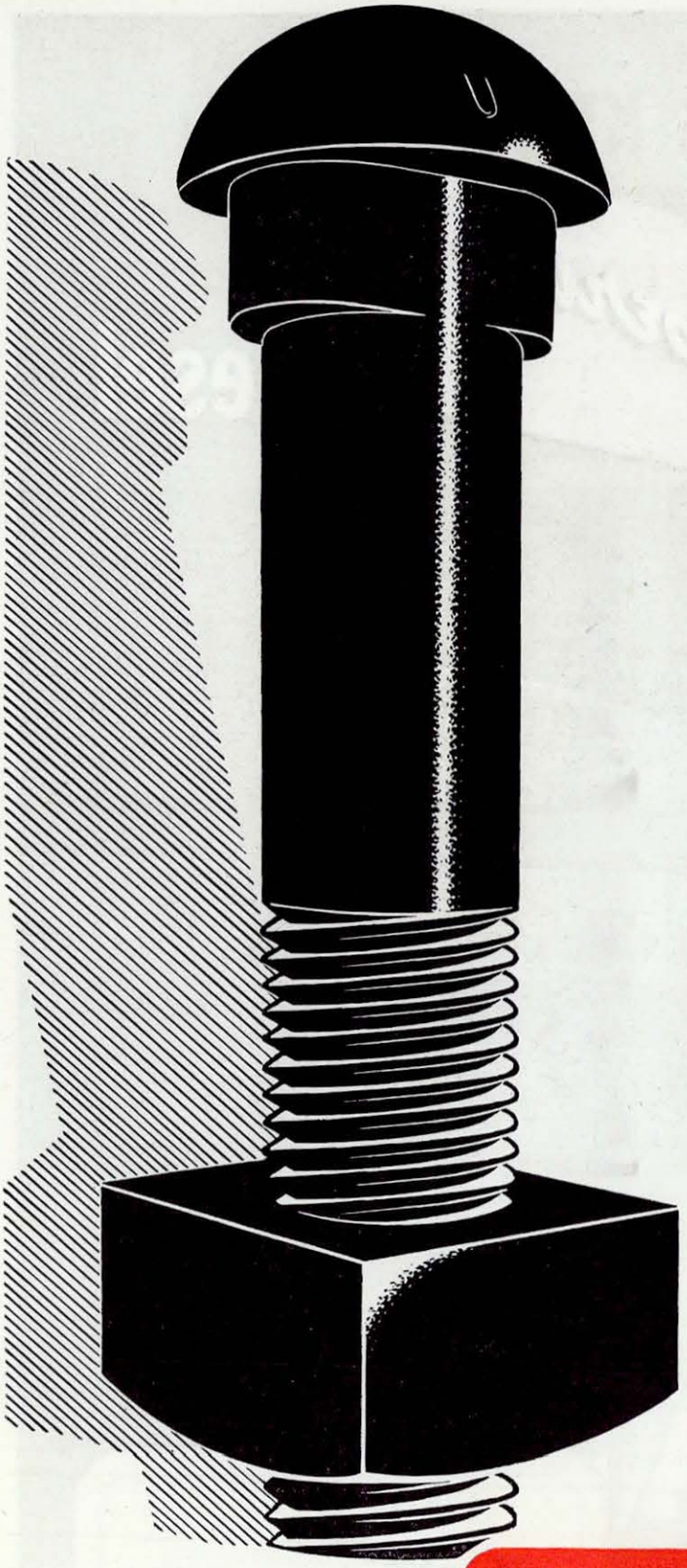

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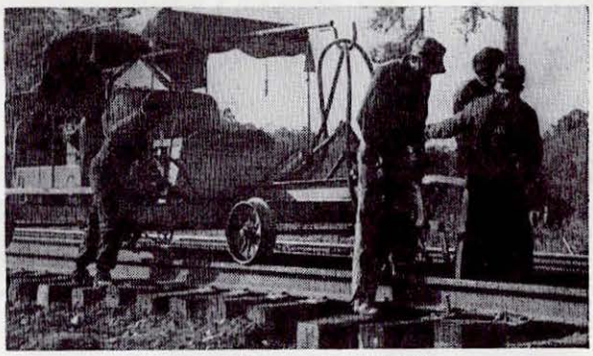

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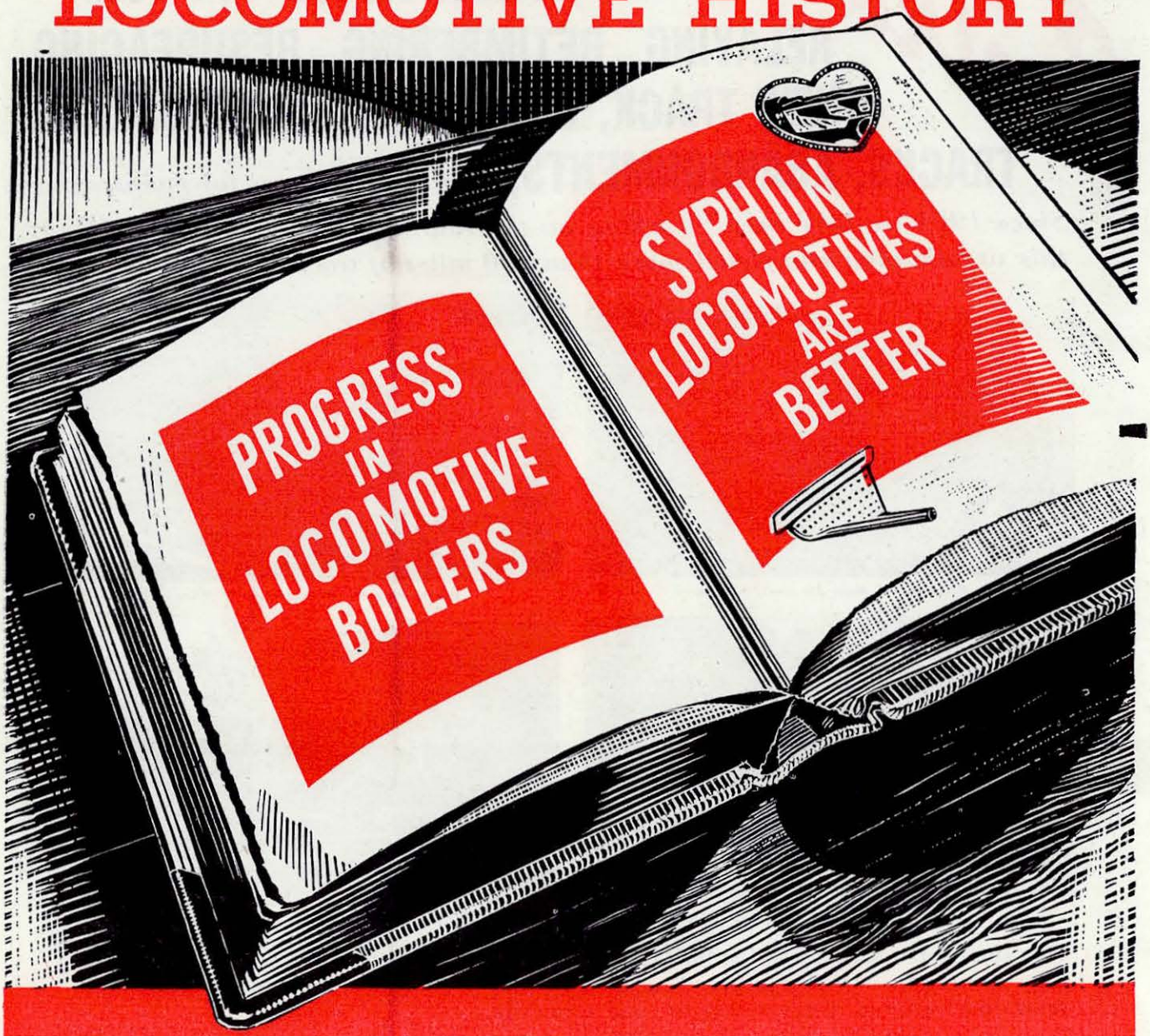

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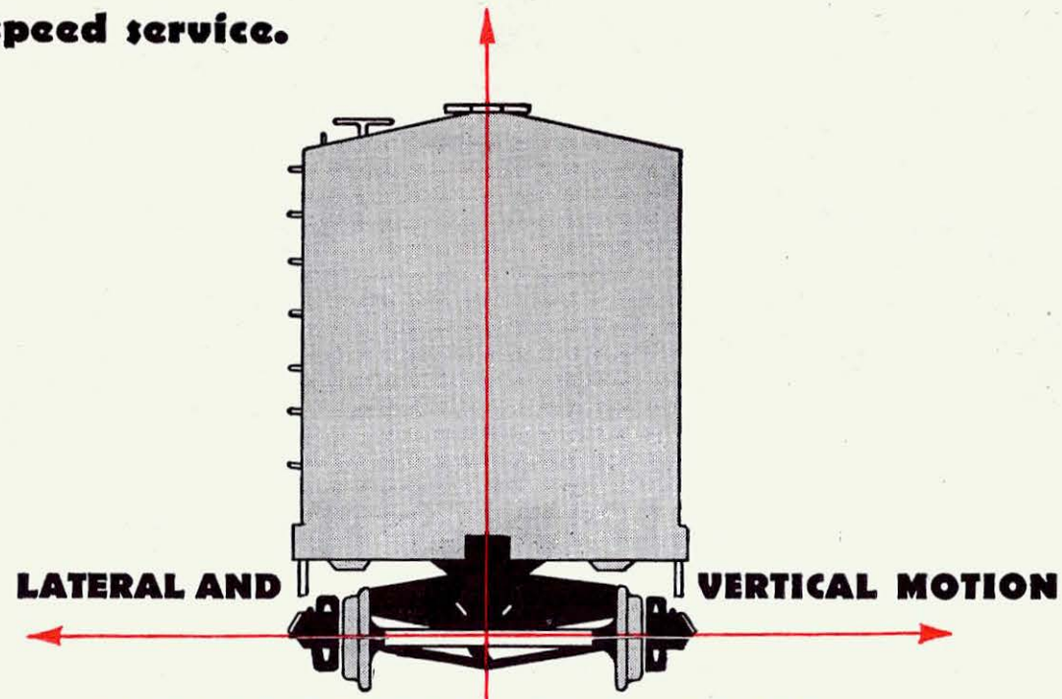

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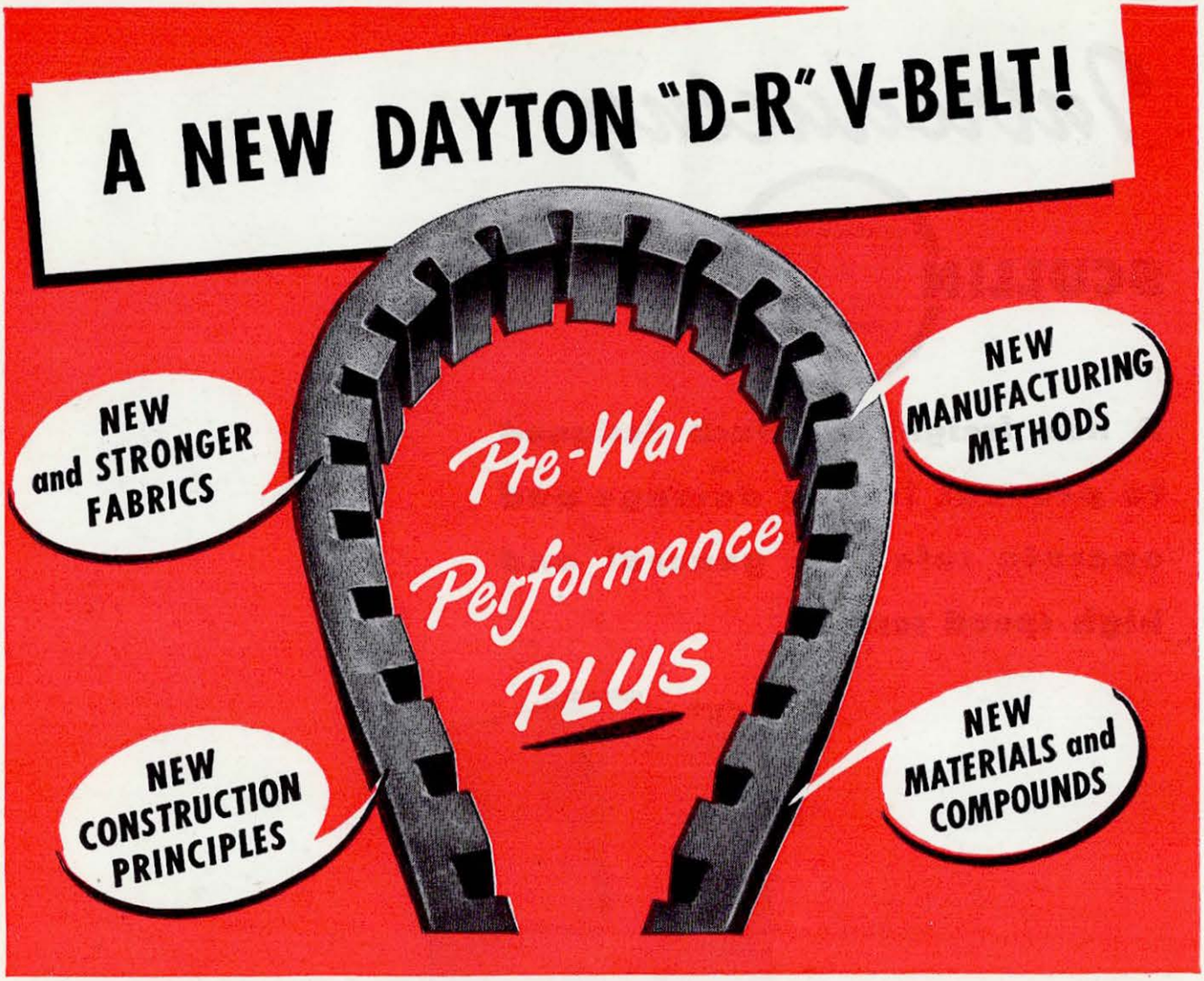

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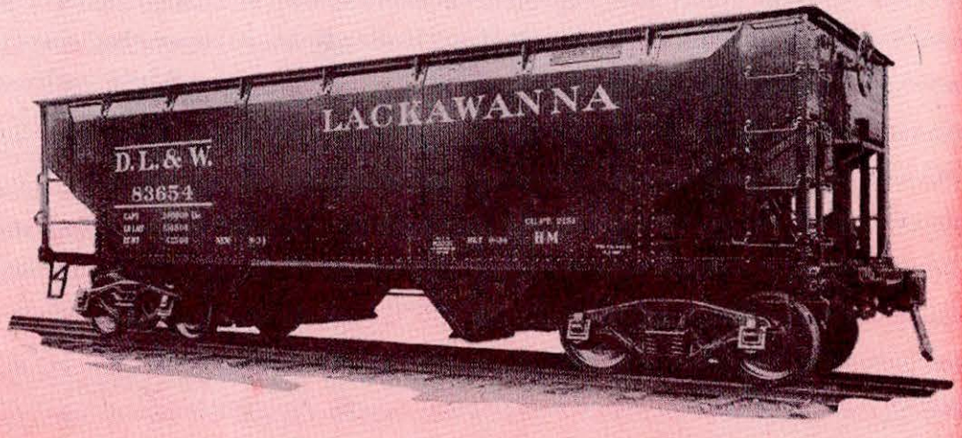

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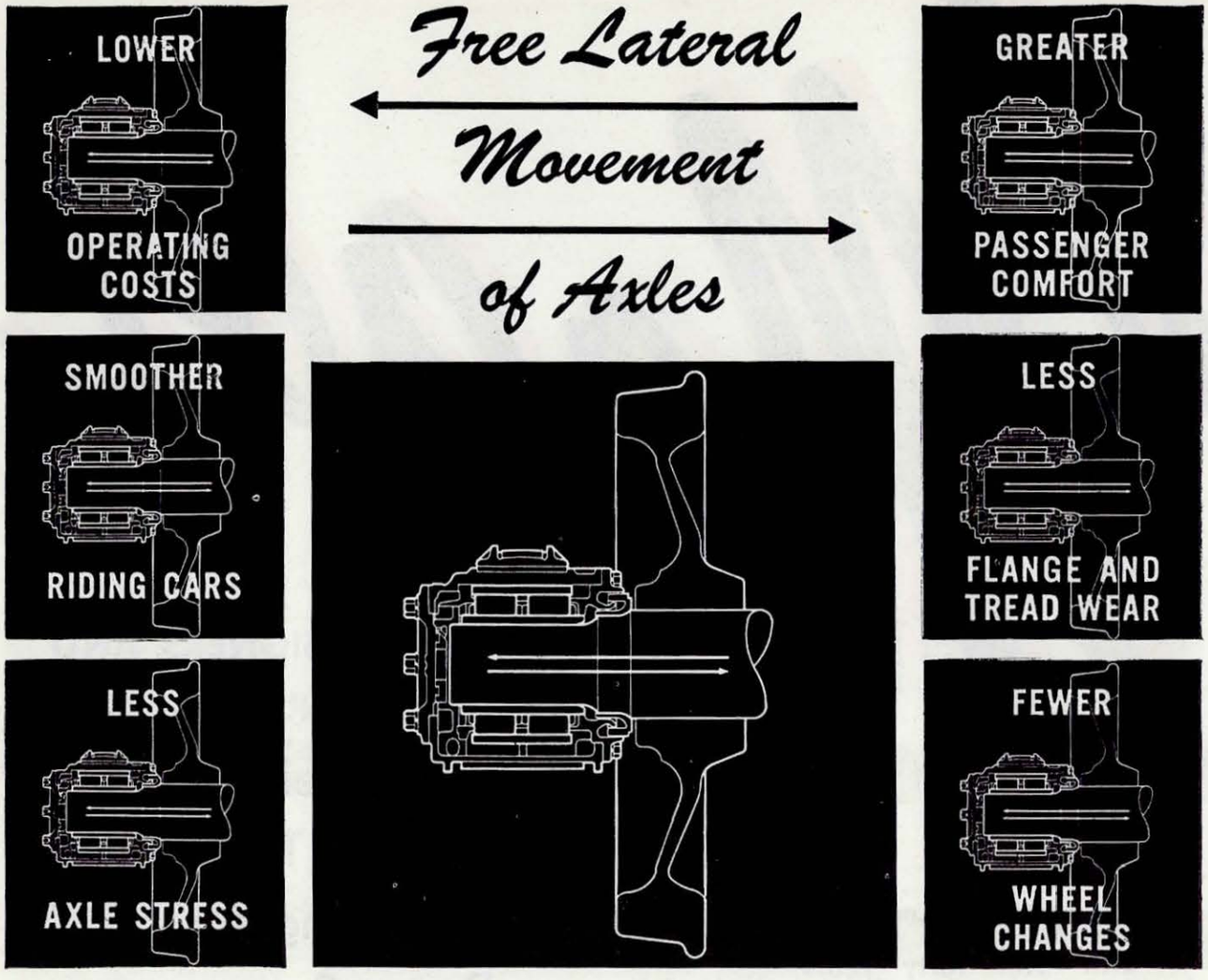

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Vol. 120 March 2, 1946 No. 9

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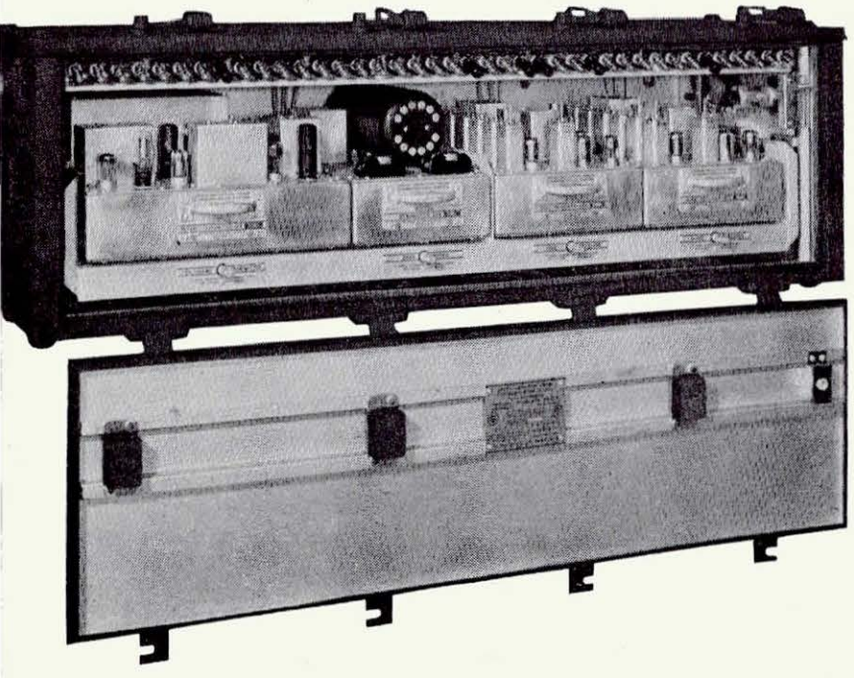

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The Week at a Glance

EMPLOYEE OPINION: The results of the first scientific nation-wide opinion research project ever to be conducted among railroad employees are reported in a 12-page article beginning on page 445 in this issue. The survey was made under *Railway Age* sponsorship by a firm of specialists in this work. The basic revelations are (1) that most railroaders like railroading and (2) that they know very little about railway earnings and other aspects of the "capital" side of the industry. They respect the competence of management, are dissatisfied with pensions, favor "full crew" and "train limit" rules, show little knowledge of the economics of transport competition, and are pretty well satisfied with the quantity and quality of the information which is now available to them about the railroad business.

●

THE GREAT UNKNOWN: It has long been recognized by many railway people that the attitude of employees is the key, not only to successful management-labor relations on the railroads, but to the maintenance of a favorable public opinion as well. The A. A. R. has for five consecutive years sponsored surveys of *public* opinion toward the carriers—and those studies have been most enlightening and helpful. Still, it has seemed to us, and to quite a number of railway people too, that specific information on what employees' views are is an even more fundamental need to intelligent understanding of the railroads' human relations problems than is parallel information on the public's opinions. So this paper decided to go out and get the information at its own expense, and the article in this issue reveals what we found out.

●

JOHNSON TO LEA: If there is a federal official anywhere with a clearer perspective on the nation's transport problem as a whole than the director of O. D. T., that individual has escaped our notice. Col. Johnson has made known his views in a submission to Chairman Lea of the House Interstate Commerce Committee and his expression is reviewed in our news pages. The O. D. T. director sees clearly the need for unified regulation of all transport and for unified promotion too—if there is justification for promotion, which Colonel Johnson doubts. As a matter of fact, he favors ending "federal aid" to transportation entirely.

●

EQUITIES' NEW FRIENDS: The equity holders and junior creditors of bankrupt railroads, who have taken a beating from the I. C. C. under the present policy of wiping them out in reorganizations, appear to have acquired new and powerful friends in the persons of Senators Wheeler and Reed. The Hobbs bill, to protect these equity holders, has passed the House but has never had a chance in the Senate because of Senator Wheeler's opposition. Now, however, Senator Wheeler has his own bill—with much the same objective as the Hobbs measure—and the report in our news pages on his hearings on this bill doesn't show the Senator especially sympathetic toward spokesmen for senior securities who are trying to keep the equities frozen out. He is critical of the failure of companies in courts' hands to retire debt and reduce interest as solvent companies have done.

●

A. C. L. STEPPING OUT: The Atlantic Coast Line is well on the way toward completing what is probably the largest program of roadbed and track rehabilitation going on anywhere in the country. Our account herein relates that, by the end of next year, the A. C. L. will have completely reballasted all main lines, renewed their ties, widened embankments and graded the right-of-way. All main lines will have heavier rail—and the program will be pushed out to the branches. For example, the double-track main line from Richmond to Jacksonville and the single-track line from Jacksonville to Tampa will have 131-lb. rail. Signals also are being respaced and otherwise modernized.

●

TRANSPORT TAXES: The Bureau of Internal Revenue has reported for the calendar year 1945 that its collections of excise taxes on transportation yielded $219 million from freight traffic and $224 million from passenger traffic. If the railroads were as careless in their use of figures as some of their rivals are, they would be claiming credit for most of these payments as railroad taxes. These taxes are, for instance, closely parallel to federal excise taxes on motor vehicle fuel—and such charges are claimed by both the petroleum industry and by highway transportation as part of the taxes they pay. Moreover, railroad excise taxes are not paid back to the donors in the form of "federal aid" as the motor fuel excise is.

●

ST. LAWRENCE AGAIN: The St. Lawrence Seaway—that perennial vision of a boondoggler's paradise, or night-mare of private-enterprise transportation, depending on the point of view—is again up for hearings before a Congressional committee and the testimony of numerous witnesses is reported in our news pages. Even Herbert Hoover, whose fondness for waterways is the socialistic chink in his otherwise soundly capitalistic armor, put in a plug for this project in Western Hemisphere communism. It was said of another dynasty, renowned for its conservatism, that it never forgot anything or learned anything.

●

OPS' CASE: Proceedings before the arbitration board which is hearing the testimony in the case of the operating unions which are seeking a wage increase of $2.50 a "day" are briefly reported in our news pages. Elmer A. Smith, speaking for the railroads, pointed out that the railroads' prospects for maximum business ended with the war and, hence, that the unions are pressing a demand for maximum wages at what will be, decidedly, not a period of maximum earnings—a situation which will affect the railroads adversely in their competition with other forms of transport.

NON-OPS' CASE: In the hearings in the arbitration proceedings on the wage-increase demands of the non-operating unions, reported briefly in the news in this issue, the unions have put forth about ten reasons in support of their claims. Speaking for the railroads, William T. Faricy said that adjustment of wages to conform to the rise in living costs could be accomplished by wage rise of 3½ cents per hour. An economist for the unions presented figures purporting to show that since 1920, the ops have fared much better in wage increases than the non-ops have.

●

NEW OR REBUILT CARS?: P. P. Barthelemy, a car man of long experience, goes into brief detail as to just how unsatisfactory the country's present freight car situation actually is, in an address reported in this issue. The delays to heavy repairs, the repairing of cars which ought instead to be scrapped, the "scrambling" of cars far away from home—when such conditions are matched up with car requirements for specific classes of loading, it is evident that a major job of equipment renewal is heading this way fast. An editorial in this issue, likewise, gets into the question of freight car supply.

●

TESTS REEFERS: The Burlington has built two refrigerator cars, incorporating advanced ideas in the design of such vehicles, plus a number of promising new devices for the improvement of the effectiveness of refrigeration. The cars will operate under test by a joint committee of perishables shippers, the A. A. R., the Department of Agriculture and other agencies—with the purpose in mind of developing the characteristics which should be embodied in an improved all-purpose refrigerator car. The cars and their equipment are described in an article herein.

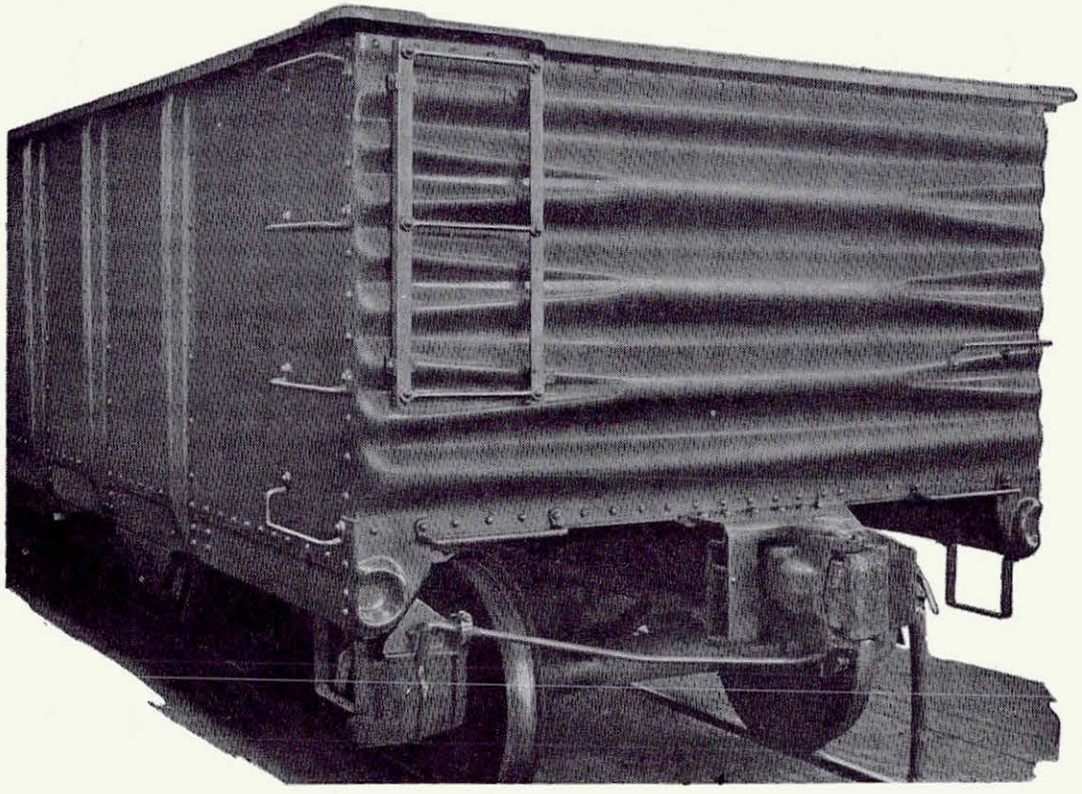
●

THE B. & O.'S RADIO: The B. & O. has found that one radio antenna on its headquarters building in Baltimore operates sufficiently well in ultra-high-frequency transmission to cover the entire Baltimore area—despite the belief that this frequency is effective only under line-of-sight conditions. Communications Superintendent Prendergast of the B. & O. in an address reported in this issue tells about radio experiments that the B. & O. has conducted at other points, and the practical problems that have arisen in connection with these installations.

●

HOW THE G. N. DID IT: The western lines of the Great Northern were called upon during the war to handle traffic increases of as high as 200 per cent, and the company's management gives its Diesel road freight locomotives the major credit for its ability to take on this overload. An article herein reveals how this Diesel power (104 locomotives, including switchers) has been strategically distributed throughout the system, each unit being assigned to the spot where its performance would contribute the most to overall production of car-miles.

A "Standard" PRODUCT



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RAILWAY AGE

Railway Employees Appraise Their Jobs

There is scarcely any element in the railways' environment which is more important to their future and to an understanding of their current problems than the attitude of railway employees toward their jobs and toward the industry. The first exact quantitative information as to this attitude, on a nation-wide basis, ever to be made available is set forth in an article in this issue—reporting the results of an opinion survey among railway employees, made by the Opinion Research Corporation, under the sponsorship of *Railway Age, Railway Mechanical Engineer,* and *Railway Engineering & Maintenance.* This article portrays in definite figures the basic raw material which is the principal component of labor-management relations on the railroads and the chief determinant of public opinion toward the railroads—which two factors largely control the political position of the railroads, i. e., how they are treated as to regulation and in comparison with rival forms of transportation.

In general, the principal disclosures of the inquiry are (1) that railway employees like the industry and take pride in its war record; and (2) that they are almost completely devoid of accurate knowledge of the industry's earnings and of its economic position. On the average, they believe the railroads to be fantastically more profitable than they are. At the same time, they are generous in their estimate of the earnings the industry *ought* to be allowed to make. Employee understanding of the railways' competitive difficulties is shown to be limited and indefinite.

Facts Are Not Always Pleasant

Those who read the report of this survey will recognize at once that it was undertaken solely to get at the facts, and not to "prove something." Indeed, some of the facts which are revealed will not be particularly palatable to those whose relationship to the industry is that of management or "capital"—for example, that a large majority of employees are in favor of such "make-work" devices as "full crews" and limitation of the length of trains. Neither the "capital" or "labor" sides of the industry can be particularly gratified by the lack of knowledge evidenced by employees in the economics of the business.

While objectives individuals may have for the railroad industry may differ, depending on which "camp" they are in, the attainment of *any* objective at all requires dealing with facts, including the unpleasant as well as the pleasant. There should, moreover, be enough satisfaction derived by anyone connected with the railroads in any way—from the evidence here presented of the interest railway employees have in their work, and the pride they take in the industry's war record—to compensate for other revelations of the survey which may be less agreeable.

The Problem of Interpretation

The full usefulness of such a survey as this can be attained only if critical common sense is exercised in its interpretation. Probably not all the findings are of equal significance as of the present date. For example, the survey reports that 89 per cent of employees believe the railroads did the best job of war-time transportation they could have done. It also reports that, when employees were asked what management could do to make their jobs more satisfactory, only one in five mentioned "higher wages." The canvass of employees was made in the first half of December, 1945, before there had been much wage-raising in other industries. Thus, a reasonable critical appraisal of the survey's results might well conclude that the showing of only one employee in five as actively interested in higher wages is, possibly, too low a ratio for March, 1946; but the ratio of 89 per cent of employees who are satisfied with the railroads' war record cannot very well have changed much.

Opinion measurement from small but scientifically selected samples of totality depends for its reliability on the skill and integrity of those who do the surveying. The firm engaged to do this study on railway employee opinion is one of the pioneers and leaders in its field, with a high reputation for thoroughness and competence. It is the same firm which has for five years made annual surveys of public opinion for the Association of American Railroads. The dependability of surveys thus conducted has been amply attested by the accuracy with which the results of national elections have been forecast by this method. The only serious hazard in the process is that some factor may arise which will largely change public opinion in the time intervening between the interviewing and the publication of the results. There is no good reason to suspect that there have been major changes of this kind, affecting the validity of this survey of railroad employee opinion—except, perhaps, the employees' views on the question of wages, which has already been mentioned.

Important Factors in Smoke Abatement

Intensive efforts to minimize black smoke from steam locomotives are now being made by railroads and the coal industry, with the primary object of overcoming this definite disadvantage in the operation of conventional steam motive power, at the same time saving a certain amount of fuel now lost out the stack. Public reaction and objection to railroad smoke have led to the adoption of smoke restriction ordinances in many cities where progressive railway managements recognize that adherence to these ordinances is not only required by law but good public relations work, as well.

Many factors must be analyzed and tested, both individually and as a group, in order to make an intelligent approach to the problem of eliminating black smoke. Locomotive ash pan, grate, stoker, brick-arch and front-end design are all vital and must be correlated, keeping in mind the kind of coal to be used and the type of service required of the locomotive. Proper maintenance of the parts mentioned is, of course, essential. Even after all known modern devices designed to aid combustion are installed, black smoke will still continue to be made and to plague the railroads, unless the human element is given special attention. This means intensive instruction and supervision of locomotive crews, for unless the engineman and fireman work together and exercise good judgment, backed by adequate "know-how" and the will to prevent black smoke, all the mechanical contrivances in the world will not accomplish this result.

Obviously, mechanical smoke-consuming equipment must be made as effective, reliable and independent of the human element as practicable. The extent to which railroads go in striving for this objective is indicated by a specific instance, cited in a paper which was presented at the well-attended and highly-constructive conference on smoke abatement and fuel economy, held by the Smoke Prevention Association of America at Columbus, Ohio, last Fall.

Over-Fire Steam-Air Jets

In this case, a 2-8-8-2 type locomotive, used in hump-yard service, was improved to the fullest extent possible in mechanical details affecting combustion, but continued to make objectionable smoke. Over-fire steam-air jets, an old idea rejuvenated to meet modern requirements, were applied, five on each side of the firebox and equipped with silencers to reduce steam-jet noise. The steam jets, interlocked with the blower but having a cut-off valve in the steam turret, were effective in changing a No. 5 smoke to practically a clear stack in 30 seconds, when used.

The locomotive crew objected to the noise, however, and usually shut off the jets when not under observation. To meet this condition, the jets were interlocked with the stoker, as well as the blower, and the extension handle was removed so the shut-off valve could not readily be closed. With this arrangement and using a little care, the stoker could be operated continuously for a few minutes, as required to maintain steam pressure, without making more than a No. 1 smoke.

Road locomotives, operated by this railroad and equipped with the modern draft and other appliances mentioned, are giving good results as regards smoke emission, provision being made on this class of power for supplying the over-fire air jets with steam from the enginehouse blower lines when firing up. When locomotives are standing at terminals, being serviced or waiting for runs, light use of the blower will cause the air jets to function as required to control smoke.

For road operation, the maintenance of steam pressure and satisfactory smoke condition is largely a question of the firemen's judgment in feeding the correct amount of coal to the firebox at the place and time required to meet steam demands, as determined by the engineman's use of the throttle valve. It cannot be said too often that the most meticulous care in providing all mechanical conditions necessary for abating black smoke from steam locomotives will be largely nullified unless engine crews are given adequate instruction and supervision in this important detail of their work.

The Importance of Trifles

One-eighth of an inch is just about one one-thousandth of the circumference of a 36-inch car wheel. Not a very important part of the 113 inches that go to make up that dimension—yet, according to statements made by reputable shop men, it is enough to account for sharp flanges, rough riding and possibly even hot boxes. The difference of one-eighth inch in the circumferences of the wheels of a pair mounted on the same axle is enough to amount to two complete revolutions of a 36-inch wheel in one mile. Two revolutions are equal to 18.9 feet. These facts are worth keeping in mind for a moment.

In a recent discussion of the vital importance of accuracy in wheelshop work a member of the A. A. R. Wheel Committee, who is also a general supervisor over the wheel work on an important railroad, made this statement: "Coach wheels are turned in a wheel lathe and taped for size after the wheels are finished; we do not depend on the measuring attachment on the wheel lathe, as we have found many 36-inch wheels out as much as three tapes and it has been proven that if a wheel is out one tape the smaller wheel must travel 9.5 feet further for each mile, thus causing sharp flanges and, in my opinion, also contributing much to hot bearings.

"We have found a number of wheels with treads turned that were as much as ⅛-inch eccentric, although they were the right tape size. This condition is caused by the material in the wheels being harder in some spots, which is mostly caused by slid flat spots. These wheels are placed in a grinder and ground true before they are placed in service."

Here is tangible evidence of the far-reaching importance of the last fraction of an inch of accuracy in the matter of wheels for the present-day high-speed service under passenger cars. As time goes on and the competition of the future demands more and more speed the shop is going to be called upon for more and more accuracy in wheel work.

It is not necessary to elaborate here again the fact that the A. A. R. Mechanical Division has been pound-

ing away for months on this matter of wheel work; its field inspectors have been observing the work of the wheel shops in the four corners of the United States and the results of their observations and experience in coordinating the ideas of the men out in the shops have been concentrated in the new Wheel and Axle Manual, which was issued recently. This, it will be readily admitted, is just about the last word in wheel and axle data with respect to manufacture, inspection and shop practice.

However, a guide to good practice is not all that is necessary. In shop after shop throughout this country the man who is responsible for getting out wheel work —good wheel work—is being handicapped by machine tools, handling equipment and tooling equipment that have outlived their usefulness by many years. He may or may not have called attention to the fact that the shop equipment is totally incapable of turning out work to the standards of accuracy that represent good wheel work. But, whether he has or not, it is up to the mechanical officers to assign some one of their staff members to the job of determining what are the standards that the schedules of the immediate future will require and get busy right now to acquire the new shop equipment that is capable of delivering work that will meet those standards.

An eighth of an inch may be a trifle but it may make a lot of difference in the performance of tomorrow's crack train on your road.

What About the Freight Cars?

On January 1, 1946, the number of serviceable freight cars showed a decrease of 8,612 as compared with the number available on December 1, 1945. Also, 4.3 per cent of all freight cars were awaiting repairs on January 1, a total of 72,963. During the first five weeks of this year shipments of revenue freight totaled 3,606,755 cars, a decrease of 3.6 per cent as compared with the first five weeks of 1945. There was an improvement in the turn-around time of freight cars to an average of 16.4 days in January, as compared to 16.7 days in December.

On the other hand, in the month of January—74,250 cars were held longer than the free time of 48 hours, resulting in a detention ratio for the month of 19.82 per cent. This was the highest percentage of detention within the past two years, and compares with 17.3 per cent in January, 1945.

This trend has been marked, and increased detention has been shown for each month since the end of hostilities in the Pacific. Meanwhile, according to the Car Service Division of the A. A. R., the demand for box cars remains heavy and "deficiencies continue in meeting all requirements." The figure of 38,987 new freight cars installed during 1945 does little to alleviate the darkness of the picture.

The reason that has been advanced by some railroad officers for their slowness in ordering new freight cars is that they are waiting to see what the trend of gross ton-miles will be before investing large sums in freight cars. All present indices point to a continuation of heavy freight traffic. Judging from the reaction of shippers to the present freight service and tightness of car supply, the railways' share of freight traffic will go down, if competitive transportation is available, unless the railways buy cars.

The situation is now complicated by the fact that, with the volume of export orders on their books, car builders are unable to promise the customary delivery time of about three months after the orders are placed. Car builders would much rather utilize their plant capacity for their regular and permanent customers—the American railways—but, before they accepted foreign orders, the builders attempted without conspicuous success to secure domestic orders.

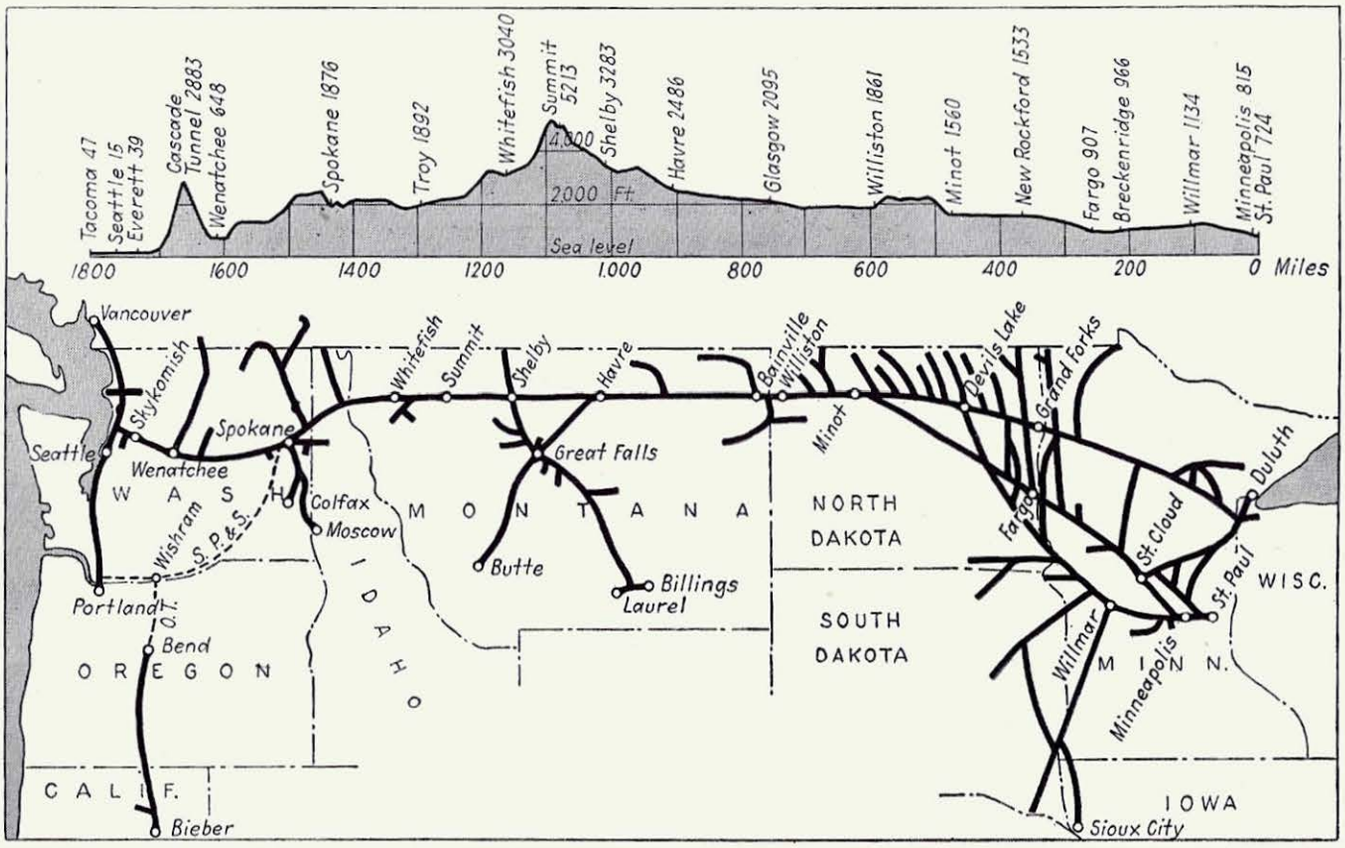
The Stand-by Question

The historic succession of feast and famine in the car building industry is deserving of serious thought. Aside from the economic questions and the problems of comparative cost, which arise when railways build their own cars instead of ordering them from the car builders, there is involved the additional matter of the "stand-by" problem of the builders which parallels a situation from which the railways themselves suffer at the hands of their customers. For example, when planes are grounded and truck operation is interfered with because of icy highways, the railways experience an increase in traffic. They have protested against being required to maintain capacity to accommodate such overloads simply for convenience of people who give them no business if they can avoid it. The practice of use by the railroads of the car builders' capacity only when convenient is not far from a parallel case—with the railroads on the sending instead of the receiving end in this instance.

Another reason for the hesitancy in placing orders is that the owning railroad frequently gets but little use from its own cars. A recent example was a railway ordering 500 new and well equipped cars, merely to find in a very short time that only 18 of these cars remained on its own lines. Just before the war, a solution was found for this condition when all Class I railroads agreed to purchase cars and a definite allotment was assigned to each railway. The "freeze" on freight car building interfered with this plan before it was well under way. Warren C. Kendall's recent announcement that the railroads are now conducting a survey to ascertain how many and what types of cars the railroads need is encouraging. The present freight car situation calls for drastic remedial action.

Index to Volume 119

The indexes to the latest volume of the *Railway Age*, July to December, 1945, are now ready for distribution, and copies may be had by those subscribers desiring them. Requests should be addressed to the Circulation Department, *Railway Age*, 30 Church street, New York 7, N. Y. Subscribers who have in previous years made application for the index need not apply again; they will continue to receive it as long as they continue to subscribe.



Map and profile of the Great Northern

Great Northern Hauls War Freight

The mountain operations on G. N. western lines were aided by use of road freight Diesel-electrics

As a result of Seattle becoming an important port through which much freight to the Pacific war theater was handled, the western lines of the Great Northern were called upon to handle increases in freight traffic of as much as 200 per cent for long periods during the war. The industrialization of the Pacific Northwest as the result of the establishment of war plants in the Puget Sound area and the virtual abandonment of intercoastal shipping were other contributing factors in producing this volume of traffic. The road freight Diesel-electric locomotives are given major credit by the officers of the railway for increasing the capacity of the line to the extent necessary to handle the record traffic.

The first Diesel locomotive to be used on the line, a switcher of 500 hp., was delivered on November 2, 1926. Since then, Diesels have been received steadily until now the total ownership of this type power comprises 104 locomotives of various sizes, used as switchers, for branch line and main line freight service and for main line passenger service. This fleet consists of the following:

Number of Locomotives	H.P.
2	360
5	600
2	900
60	1,000
9	2,700
5	4,000
6	4,050
15	5,400

One of the 360 hp. locomotives is in combination switching and light road service, the other in switching service. The 600 hp., 900 hp. and 49 of the 1,000 hp. locomotives are used in switching service. Of the eleven 1,000 hp. units, six are in road freight service, four in combination passenger and switching operations and one in passenger service. The 4,000 hp. locomotives are used in passenger service on the run of 1,609 miles between St. Paul, Minn., and Wenatchee, Wash. One 4,050 hp. locomotive is used as a helper on the grade between Walton, Mont., and Summit. The remaining five 4,050 hp. locomotives are used in road freight service between Laurel, Mont., and Wenatchee, Wash. All of the 5,400 hp. locomotives are assigned to the Kalispell division but are used in main line road freight service between Havre, Mont., and Wenatchee, Wash.

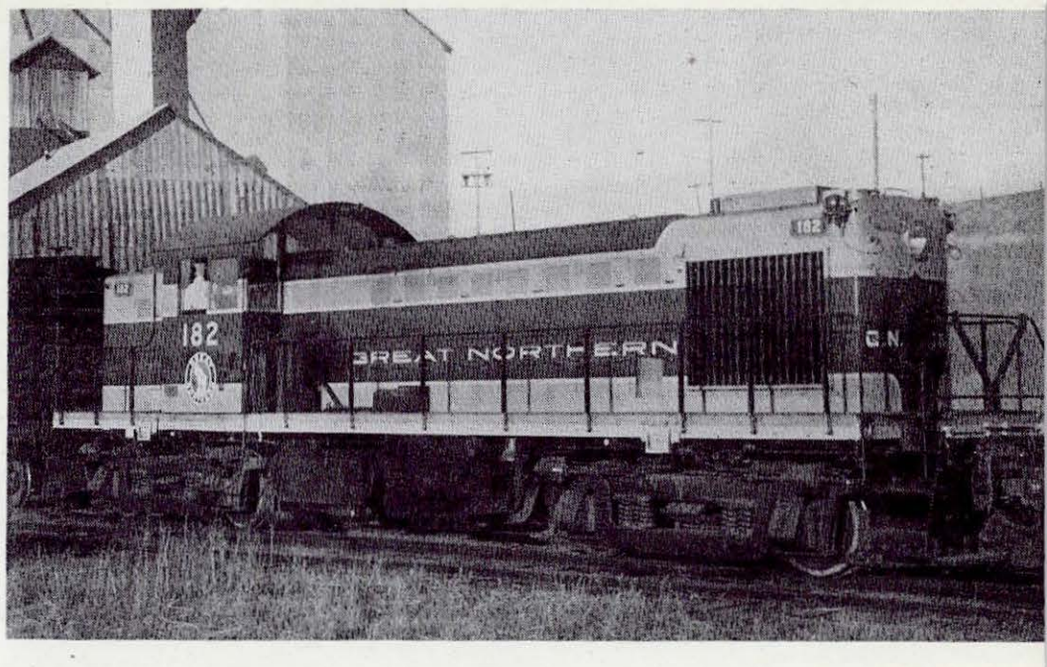
Eastern Lines Operations

The eastern lines of the G. N. consist of the Willmar, Mesabi, Dakota and Minot divisions and extend as far west as Williston, N. D., near the Montana state line. Diesel switchers are used at the following points:

Minneapolis, Minn.	Sioux City, Iowa
St. Paul	Fargo, N. D.
Willmar	Williston
St. Cloud	Grand Forks
Breckenridge	Minot
Crookston	

Two 2,700 hp. Diesels, delivered in May and June, 1941, were the first to be used in road freight service on the Great Northern. These handle passenger trains between St. Paul and Duluth, 160 miles, in the daytime and freight trains on the same run at night. Four

One of the 1,000 hp. combination road and switching Diesel locomotives of the G. N.



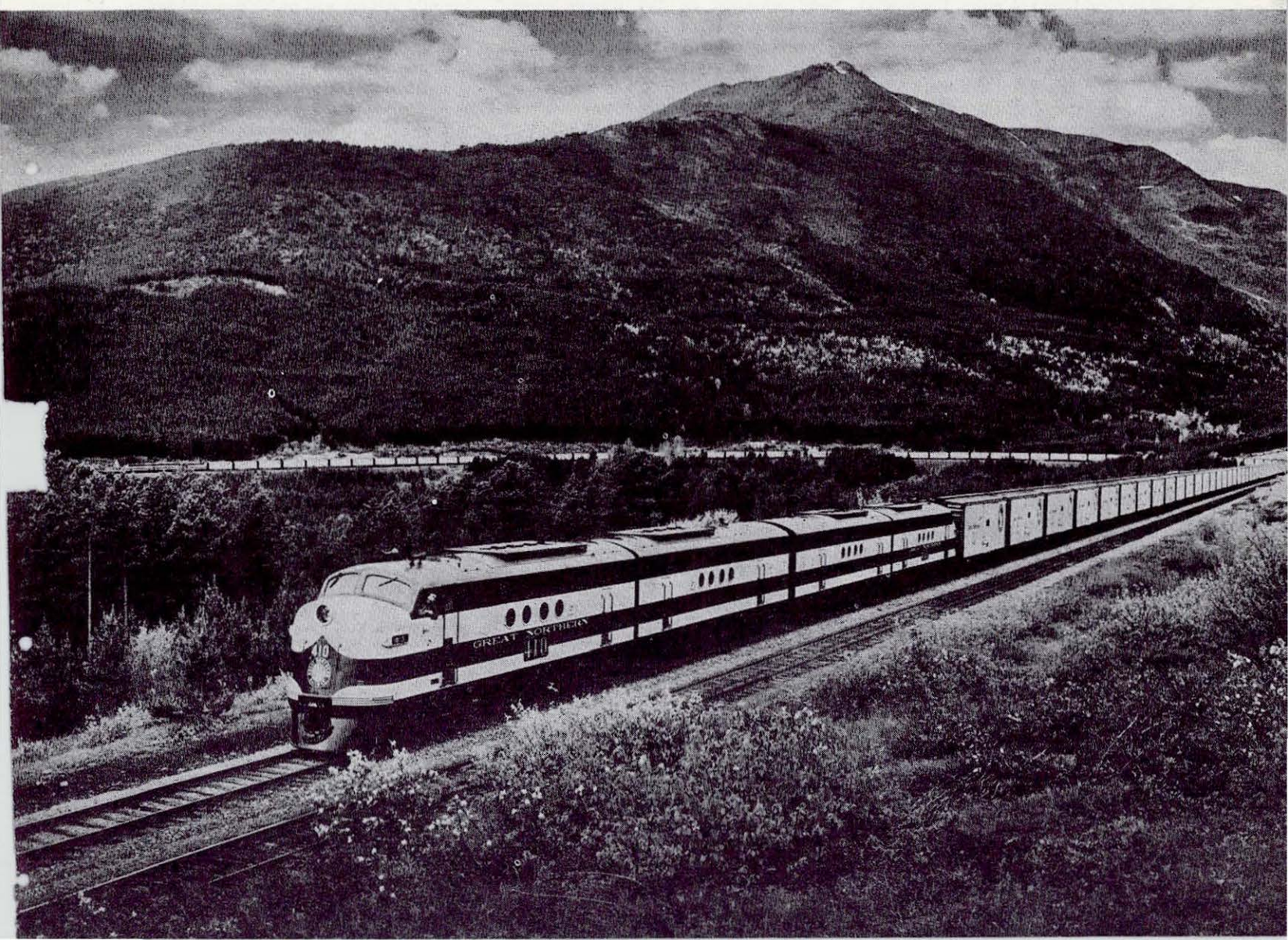
1,000 hp. Diesels are in road passenger service between St. Paul, Grand Forks and Duluth. Four 2,700 hp. Diesels are in road freight service between Minneapolis and Grand Forks, via St. Cloud. Two 2,700 hp. Diesels are in road freight service between Sioux City and St. Cloud. Other Diesel operations on the Eastern lines, on secondary main lines or branches, are as follows:

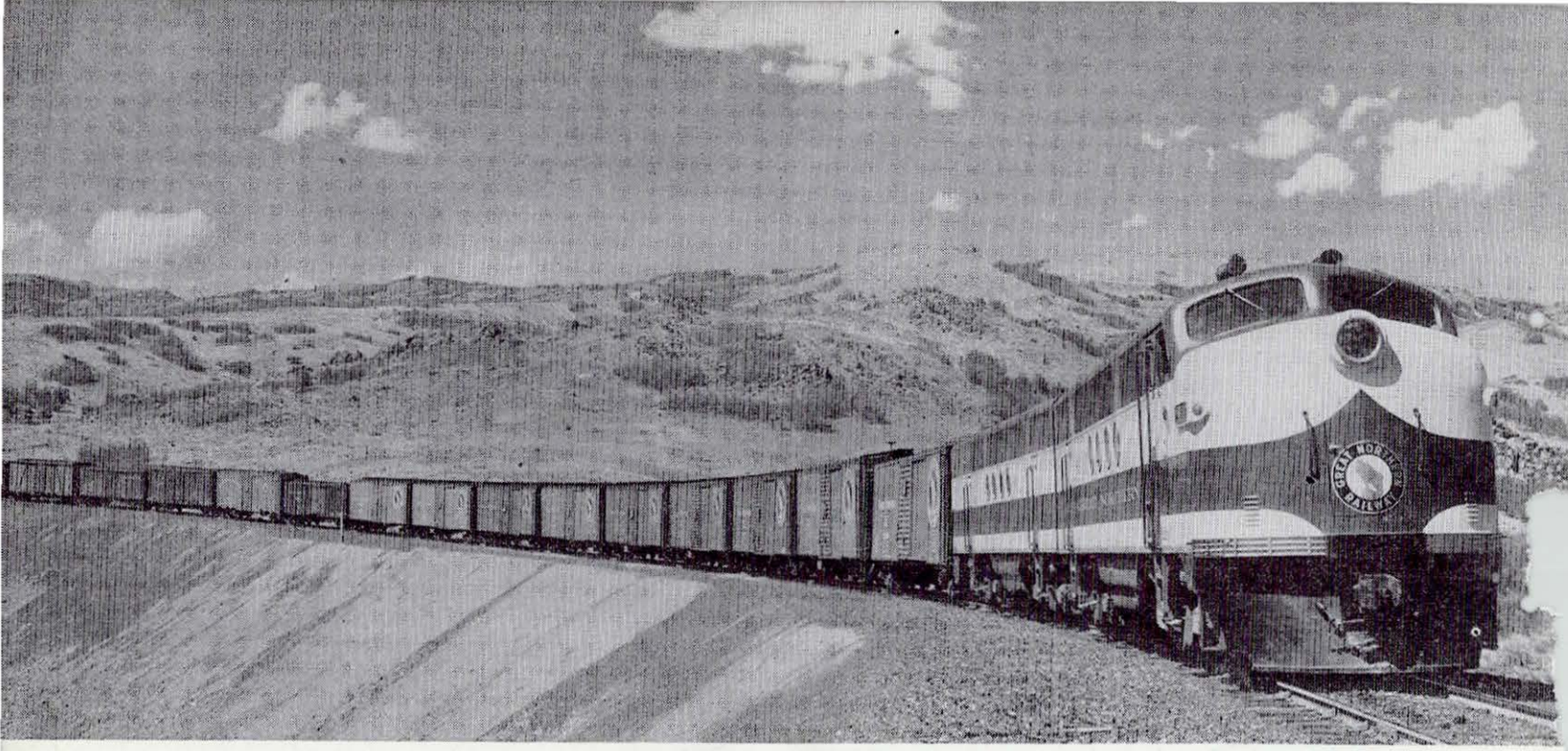
	Miles
Grand Forks, N. D.—Neche	82
Stanley, N. D.—Grenora	88
Willmar, Minn.—Sioux City, Iowa	225
Fargo, N. D.—Devils Lake	167

Western Lines Operations

While the Diesels have proved extremely effective on the Eastern lines, it is on the Western lines that the most intensive use of road freight Diesels has been made, and specifically for hauling the vastly increased war-time freight over the Rocky Mountains. The Great Northern has an unusually favorably located line through the Rockies. The highest point reached, Summit, Mont., is only 5,213 ft. above sea level and the entire railway has only 55 miles of main

A four-unit, 5,400 hp. Diesel-electric locomotive with a Diesel helper hauling a train of perishables near Blacktail, Mont., on the Great Northern





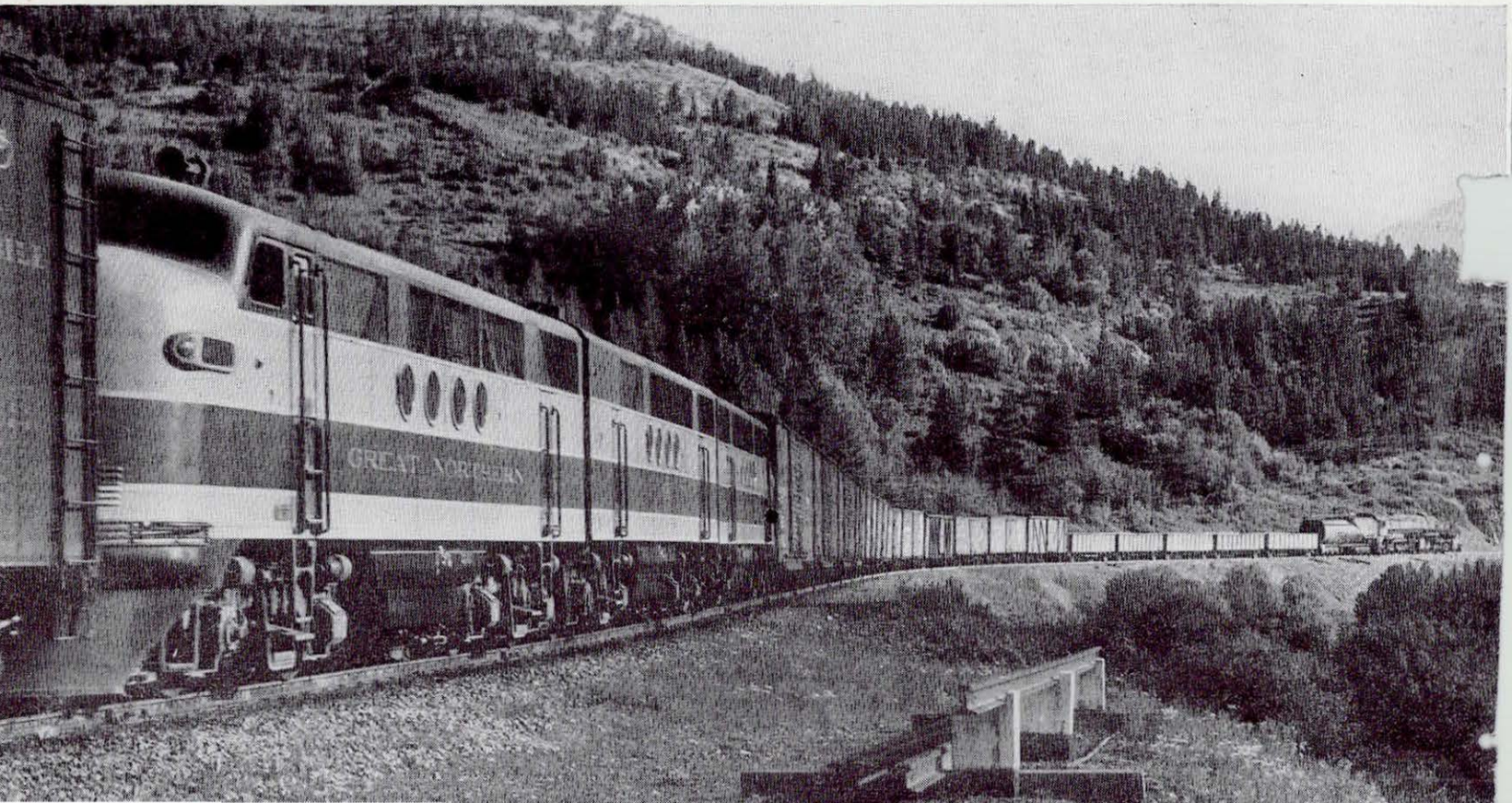
A two-unit, 2,700 hp. Diesel-electric locomotive approaching the summit of the Continental Divide on the Great Northern line between Butte, Mont., and Helena

line at elevations of 4,000 ft. or over. Between Williston, N. D., the eastern terminus of the Western lines, and Seattle, there are seven stretches of double-track aggregating 172 miles, the longest extending between Shelby, Mont., and Blackfoot, 51 miles, on the eastern slope of the Rockies. The grades through the Rockies were kept at a maximum of 0.8 per cent in general, with a few short 1 per cent grades and one stretch of 1.8 per cent grade for 18 miles eastbound from Walton, Mont., to Summit.

Before the days of swollen traffic, the railway and its equipment were more than adequate for the freight service needs of the territory it served. However, with expanding war-time traffic, a tight motive power situation was foreseen. With the number of trains handled per day rapidly increasing, and with the experience in Diesel operation already obtained, it was felt that the procurement of a new fleet of road freight Diesels was essential. Accordingly, a fleet of 15 four-unit road freight Diesels of 5,400 hp. was purchased, the first being delivered in December, 1943, while 12 more were delivered in 1944 and 2 more in March, 1945. Early in 1945, also, six three-unit Diesels of 4,050 hp. were delivered.

Since 1939, Diesel switchers had been

A three-unit, 4,050 hp. Diesel-electric helper is used on 18 miles of 1.8 grade to the summit where the G. N. crosses the Rockies



A four-unit Diesel-electric locomotive at Glacier Park station on the eastern slope of the Rockies on the G. N.

operated on the Western lines at the following points:

Spokane	Great Falls
Hillyard	Wenatchee
Klamath Falls	Seattle
Interbay	Havre
Whitefish	

In addition, 1,000 hp. Diesels were operated on the Spokane-Moscow-Colfax branch and the Bainville branch. The new fleet, however, was specifically intended for main line freight operations and was so assigned. The 15 four-unit, 5,400 hp. locomotives were assigned to main line freight service between Havre, Mont., and Wenatchee, Wash., 704 miles. Havre is the terminal point where the long climb up the eastern slope of the Rockies begins, while Wenatchee is just east of the Cascades and is the eastern terminus of the electrified main line of the G. N. through the Cascades and the Cascade tunnel. This electrification extends as far west as Skykomish, Wash., on the western slope of the Cascades and 71 miles from Wenatchee.

No helpers are used with the Diesels westbound, but a three-unit 4,050 hp. Diesel is used as a helper on eastbound freight trains from Walton to Summit, where the 18 miles of 1.8 per cent grade is encountered. With the aid of these helpers, freight trains make the climb at an average of 45 min. faster than with steam operations.

This particular area has greater snowfall than almost any other section of the United States. Annual snowfall of over 200 in. is about average at Walton and Summit, while a total of 300 in. is not uncommon. Through years of experience the G. N. has conquered the snow problem. Many concrete snowsheds have been built at places where experience has indicated that snow-slides are most likely to occur. In addition, a number of snowdozers are operated, beginning almost as soon as the snow begins to fall. These snowdozers were specially designed by the G. N. and are equipped with electric lights and steel wheels. Since they make practically passenger train speed, the line is rapidly cleared. There are also four rotary snowplows on the Western lines, but these are only used occasionally, usually only when a slide with logs and timber in it covers the tracks. There has been no difficulty whatever in operating the Diesels through the territory of heavy snowfall.

The G. N. has a highly important secondary main line, which extends south from Shelby, Mont., on the main line, via Great Falls, to Laurel, where connections are made with the Burlington and Northern Pacific. Grades and curvature on this line are considerably more severe than on the main line. Five three-unit 4,050 hp. Diesel locomotives have been assigned to this line for about a year and the use of these units has speeded up operations over this line.

Between Great Falls and Butte, via Helena, the G. N. has a line through the mountains, with heavy grades and curvature. On this line, a two-unit 2,700 hp. Diesel has been assigned for the last six months and is giving excellent service. Its dynamic brake has been particularly effective in the avoidance of hot wheels on the steep grades. Both the three and four-unit Diesels have averaged well over 7,500 miles a month in road freight service. Originally, the Diesels were largely maintained at temporary shops at Whitefish, Mont., the headquarters of the Kalispell division. Since the recent completion of a new shop of the most modern design at Havre, Mont., all repairs except running repairs will be concentrated there. The details of the construction of this shop will be described in an early issue of the *Railway Age*. In addition to the main shop at Havre and the small shop at Whitefish, another small shop has been established at Great Falls, to take care of the running repairs on the Diesel locomotives operating between Laurel and Wenatchee, and between Great Falls and Butte.

R. J. Bowman, New President of the C. & O.

R. J. BOWMAN, who, as announced briefly in last week's *Railway Age*, has been elected president of the enlarged Chesapeake & Ohio system, to be evolved through merger with the Pere Marquette, has had a long and varied schooling for the important new responsibilities he will assume. At the age of 51, in 1942, he became president of the Pere Marquette, following 13 years as operating vice-president of that road. This elevation climaxed 35 years of railroading, including 20 years on the New York, Chicago & St. Louis, and two years spent on the Erie, 1927 to 1929, under J. J. Bernet, president, who had been the chief executive of the Nickel Plate from 1916 to 1927.

R. J. Bowman

Started With Nickel Plate

Mr. Bowman began his career on the Nickel Plate as freight clerk at Mortimer, Ohio, in 1907, serving in that capacity until 1910. The career of a telegrapher attracted him and he applied himself to mastering the Morse code at nights. After becoming proficient in telegraphy, he was transferred to the job of agent-operator and relief agent at Millers City, Ohio.

It was discovered that he had a natural bent for meeting the novel situations which constantly arise in railroading—a faculty for mastering the details of operations quickly and of fitting himself to new and unfamiliar situations. Despite his nominal job as agent-operator, he soon was being used as a "trouble shooter," moving from point to point along the road, untangling congested situations and restoring the smooth flow of traffic. In pursuing this varied work, he acquired, of course, a wealth of experience. At home he studied nights, supplementing his elementary and high school training and grounding himself in mathematics, on the economics of good railroad housekeeping and on other subjects. It was said of him, on the Nickel Plate, as early as 1923, that he could perform well any task on the railroad, except perhaps engineering, and he had a pretty good over-all grasp of that.

When the late J. J. Bernet became president of the Nickel Plate and put under way an extensive program of rehabilitation and improvement, Mr. Bowman was among the young men whose services he utilized. Nearly every important managerial change—on the Nickel Plate from 1923 and on the Erie from 1927 to 1929—brought him promotion to a more responsible post.

During his career, he served in the dispatcher's office and in the superintendent's office of the Nickel Plate at Fort Wayne, Ind., from 1914 to 1918, and as chief clerk to the superintendent of freight transportation and as chief clerk in the office of the general superintendent in that city from 1918 to 1920. He was appointed chief clerk to the president of the Nickel Plate in 1920, continuing in that capacity until 1927. He served as assistant to the president of the Erie in 1927-28 and as assistant to the vice-president of that road in 1928-29. He was elected vice-president in charge of operation and maintenance of the Pere Marquette in 1929.

With the entrance of Robert R. Young and Allan P. Kirby into the railroad field in 1937, he became one of their key operating men and, as already noted, was moved up to the presidency of the Pere Marquette in 1942. In that capacity he revitalized the railroad through the efficiency which he introduced into its operations.

He is a member of the Detroit, Mich., Athletic Club, the Detroit Golf Club, the Bloomfield Hills Country Club, the Recess Club of Detroit, and the Union League Club of Chicago.

Mr. Bowman succeeds Carl E. Newton, who last month announced his resignation as Chesapeake & Ohio president to return to the practice of law with the New York law firm of Donovan, Leisure, Newton & Lumbard, which he left in December, 1942, to head the C. & O. in the war emergency. Mr. Newton's resignation will become effective at the annual meeting of the company on April 23, at which time the merger agreement will be submitted to C. & O. stockholders. Pere Marquette stockholders will vote on the merger at their annual meeting in Detroit, Mich., on May 7.

Mr. Bowman and Robert W. Purcell, vice-president and general counsel, have been elected to the C. & O. board. The board also has named candidates as directors to be presented to the stockholders for election at the annual meeting of the company. Mr. Newton requested that his name be withdrawn from nomination to the new board and with this change and the addition of Messrs. Bowman and Purcell, the new board will include all present incumbents.

Robert R. Young, C. & O. chairman, was elected chairman of the new company and all vice-presidents of both companies will hold similar office in the merged company. Application is being filed with the Interstate Commerce Commission for authority to merge the roads together as constituents of an enlarged Chesapeake & Ohio system.

5,000 Miles in New System

The system created by the merger would total approximately 5,000 miles of main-line road. It would embrace lines from Newport News, Va., and Washington, D. C., via Columbus, Ohio, to Toledo, and via Cincinnati, Ohio, to Chicago, and a line, north of Lake Erie, from Buffalo, N. Y., into Michigan. Throughout the lower Michigan peninsula the Pere Marquette has a network of lines, linked by car ferry service with the west shore of Lake Michigan, where traffic is interchanged with carriers serving the northwest.

THE NEW YORK CENTRAL has welcomed back from the war into its ranks a bit of paper which played its own part in the war. It is Form A 1001, or a timetable. While plans for the occupation of Japan were being made by the Navy, security measures required that code names be given to designate routes for mine sweepers, occupation points, landing places, etc. The personnel, having used up a great many names in their course across the Pacific, were at their wits' end thinking up more names, until Lt. Lawrence A. Pomeroy (formerly in the Central's freight traffic office in Cleveland) came to the rescue by suggesting the use of names found on the Central's timetable. More than fifty station names lent themselves phonetically to communication, and the names are still in use on the Navy's charts. Lt. Pomeroy, on a recent visit to New York, gave back to the Central the timetable which has traveled to Hawaii, the Marshalls, the Marianas, the Philippines, Okinawa and the Japanese mainland.

Railway Age

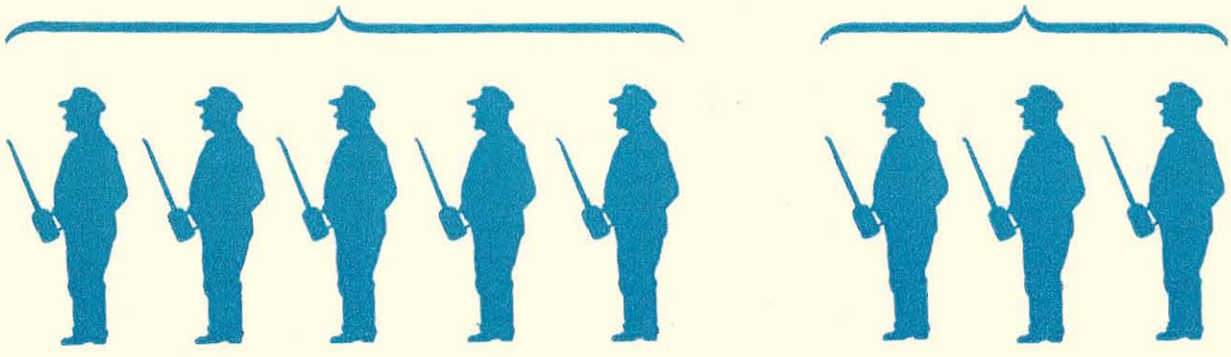
March 2, 1946

What Railroad Employees Think About the Railroad Industry

How Popular Railroading Is With Railroaders

Asked whether they would go to railroading again if they were starting their careers all over, out of every 8 employees—

5 would go railroading again ***3 would not***



RAILROAD employees like their work so well that, if they were starting their careers all over, five out of eight of them would go to railroading again. Such is the basic and characteristic disclosure of a survey of railroad employee opinion regarding the railroad industry—conducted for *Railway Age, Railway Mechanical Engineer* and *Railway Engineering & Maintenance* by the Opinion Research Corporation of Princeton, N. J. —pioneer organization in the scientific measurement of public opinion by skilled sampling, based on personal questioning by trained interviewers.

Railway Age and the two associated Simmons-Boardman technical railway papers arranged for this survey because of a conviction, based on long experience in dealing with railway public relations problems, that the opinion of the individual employee is the keystone to successful relations of the railroads with the public—just as, also, what the employee thinks about his job and his company is the raw material from which the industry's labor relations, be they good or bad, is made.

These publications were motivated by the belief that, the factor of employee opinion being as important as it is to the well-being of the railroad industry, an effort should be made to get some definite knowledge about it —rather than to continue to rely on opinion and intuition, however persuasive. No matter how accurate shrewd guesses or "hunches" on such questions may be, beliefs thus derived cannot be checked, and, consequently, it is not possible to act upon them with the same assurance as with those founded on objective quantitative data.

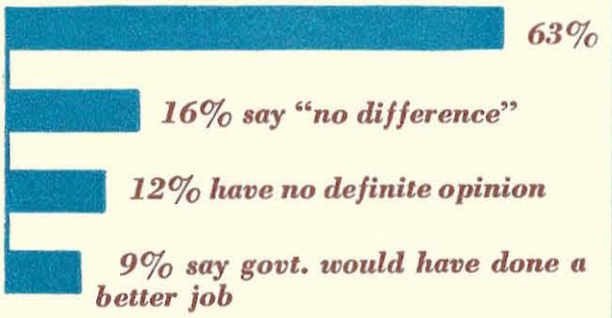
For example, a personnel officer of the telephone industry observed several years ago that the employee relations situation of the railroads was fundamentally a healthy one, because most railroad work is interesting —involving little of the depressing repetitive processes

Additional single copies of this article are available without charge—as long as the limited supply lasts—to properly interested persons who will use their letterheads in mailing their requests. Prices for quantities on application. Address Editor, Railway Age, 30 Church Street, New York 7.

which characterize so much of other large-scale enterprise. In the opinion of this telephone executive, such friction as might exist between employees and management should be relatively easy to remove—since it would all have to arise, not from any inherent characteristic of railroad work itself, but either from (1) misunderstanding of the facts of the business or (2) from irritations in conditions of work which, not arising from anything fundamental in the nature of railroad work, could be corrected with relatively little difficulty. That diagnosis can now be said to be no longer merely an opinion but is in large measure elevated by this survey to a position of objective scientific fact. That is to say, a substantial majority of railway employees do—undeniably now—like their work so well that, if they were starting in all over again, they would still go to railroading.

Government Ownership

63 per cent of employees say government would have done a worse job than private managements if it had operated the railroads during the war.



"It's in My Blood"

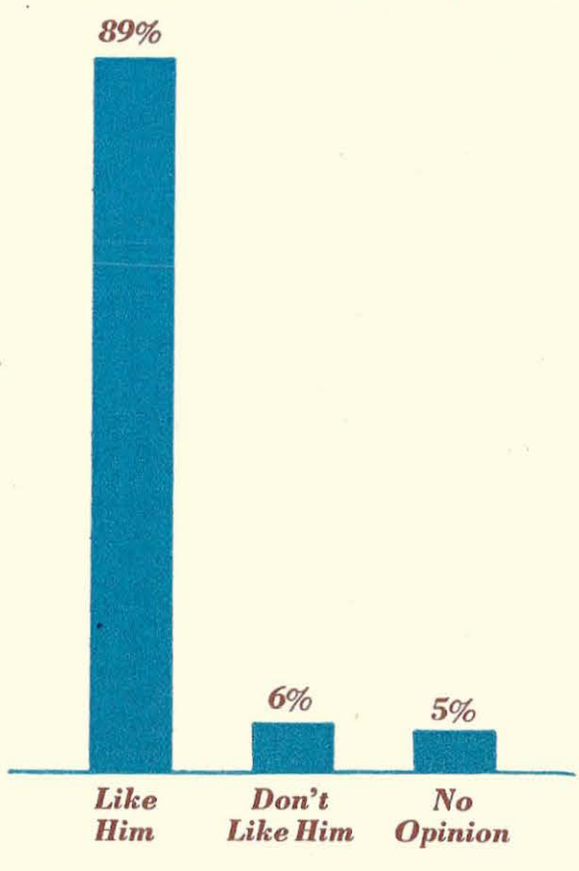
Further evidence on this point is provided by the reasons those employees who like the work give for liking it, e. g., more than half of all respondents either say that they "enjoy railroading" or that "it's in my blood." The minority who do not like their jobs, for the most part, give such reasons as "slow advancement" or irregular hours for their disapproval—i. e., only a relatively small ratio (less than one-fourth) name some objection which is inseparable from railroad work.

Moreover, when asked what topic they would most like to talk about to an executive of their company, almost as many respondents mention some means of improving railroad service as name either wages or working conditions. Specifically, the three questions employees would most like to discuss with management, with their relative numerical weights are: Wages and pensions (22); working conditions (19); improvements in equipment and service (19).

No other industry is so dependent as are the railways on a friendly public opinion—because no other industry is so minutely regulated, not alone by the federal government but by government at every level and in every locality. Every operation of the railways is surrounded, not only by the edicts of regulatory commissions, administrative officials, legislatures and city councils, but by an enormous and rapidly growing competing transportation plant provided at government expense—so that, without a relatively high degree of friendly understanding by governmental agencies and officials, the railroads could not only have no hope of profitable operation; they could scarcely operate at all. The opinions of millions of people form the governmental environment which determines whether the railways will be permitted to thrive or will be strangled; and this popular opinion is largely the product of the contact of the traveling and shipping millions with individual railway employees. Relatively few of the public are in touch with railway management; to most people the railroad employees—be they good or bad, informed or ignorant—*are* the railroads.

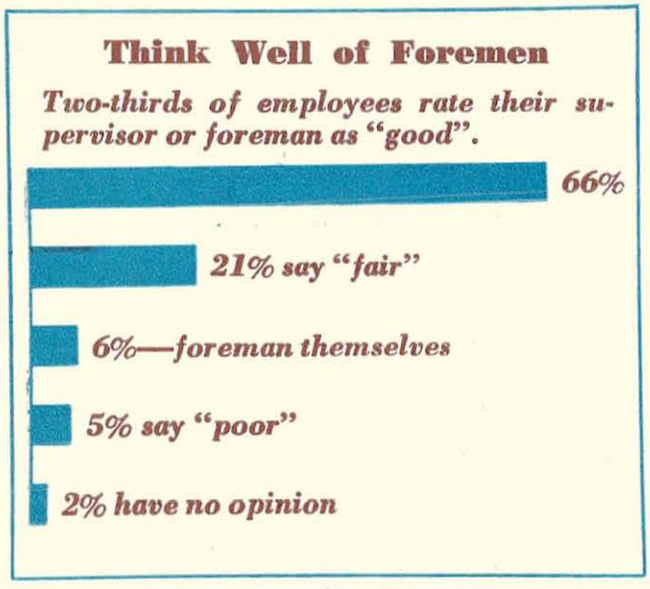
Management Is Popular

Almost nine out of ten employees think well of the highest ranking officer of their company with whom they are acquainted.



The Opinion Research Corporation has conducted an-

nual surveys of public opinion for the Association of American Railroads for the past five years. In the 1945 survey (see summary in *Railway Age,* November 3, 1945, page 717), it was disclosed that 74 per cent of the public favored fair and equal treatment of all forms of transportation; but, at the same time, 62 per cent of those who had an opinion (16 per cent had none) believed that such equality of treatment had already been attained. The fact that the railroads have to build, maintain, and pay taxes on their roadways—while improved waterways are built and maintained by the taxpayers without any contribution by vessel operators—has made no significant impression whatever on a majority of the public, which seems equally unaware of the inequality of treatment accorded the railroads which is inherent in the fact that commercial highway and air transport facilities are paid for in large measure from general taxation.



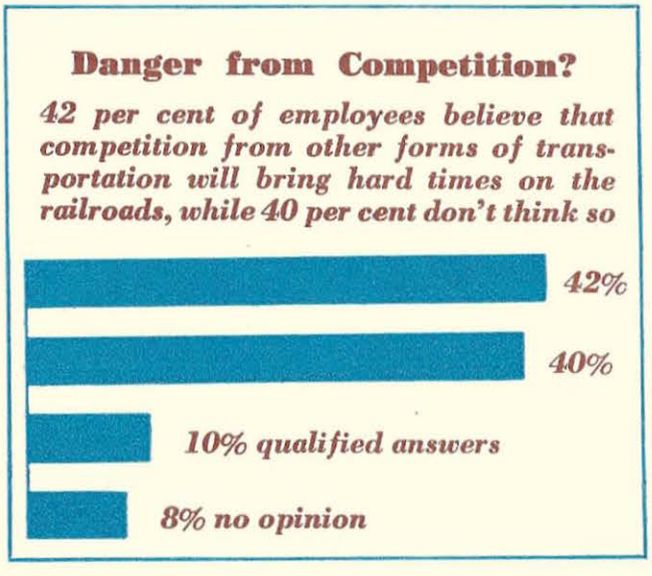
The Principal Factor in Public Opinion

There are some 1,400,000 railroad employees—about 1 per cent of the total population. It seems scarcely likely that 51 per cent of the total population (62 per cent of those with an opinion) would hold the view, as the A. A. R. survey shows it does, that the railroads, highways, waterways, and air transportation all have equally fair competitive environment unless railway employees also held some such opinion of the railways' relative competitive position. The *Railway Age* survey of railroad employee opinion confirms this surmise. It discloses that 64 per cent of railway employees believe that, prior to the war, railroads, airlines, and waterway and highway carriers all had an equal chance to make a fair profit.

This substantial majority of employees reached this conclusion despite the fact that an even slightly larger ratio (68 per cent) is aware that railway taxes—all going for general governmental expenses, and none for providing railroad facilities—are more burdensome than the taxes paid by other forms of transportation, such taxes (or, more properly, fees) being largely used for the payers' own benefit. The inference is that, while about two out of three railroad employees realize the inequality of the railroads' position as to taxes, they do not believe that this inequality has any important bearing on the railroad's ability to operate at a profit. With such a view of the situation, the employees obviously cannot explain it any differently to the general public—a condition which is doubtless an important factor in the dominant public belief that the railroads are equitably treated.

Tolerant of "Federal Aid"

Only 61 per cent of railroad employees realize that there have been "federal aid" appropriations for competing forms of transportation, and one employee out of three believes that such appropriations are a "good idea." Of the 28 per cent of employees who believe that the tax-and-regulatory situation before the war did not give the railroads an even chance to earn a profit, just about half would correct the condition by equalizing conditions of taxation and self-support. The remainder would achieve equality through changes in regulation and in adjustments in the rate level. Only 41 per cent of employees are aware of the present controversy over rate regulation—as typified by the Justice Department's and the State of Georgia's anti-trust suits against the railroads, which, if successful, would destroy the "conference" or "bureau" mechanism for initiating rate changes, under I. C. C. regulation—and this 41 per cent is quite lacking in positive convictions as to what rate procedures should be. None of the respondents mentioned the Bulwinkle Bill (which has already passed the House of Representatives and which would remove all question of the legality of the "conference" method of rate-making).


Danger from Competition?
42 per cent of employees believe that competition from other forms of transportation will bring hard times on the railroads, while 40 per cent don't think so
42%
40%
10% qualified answers
8% no opinion

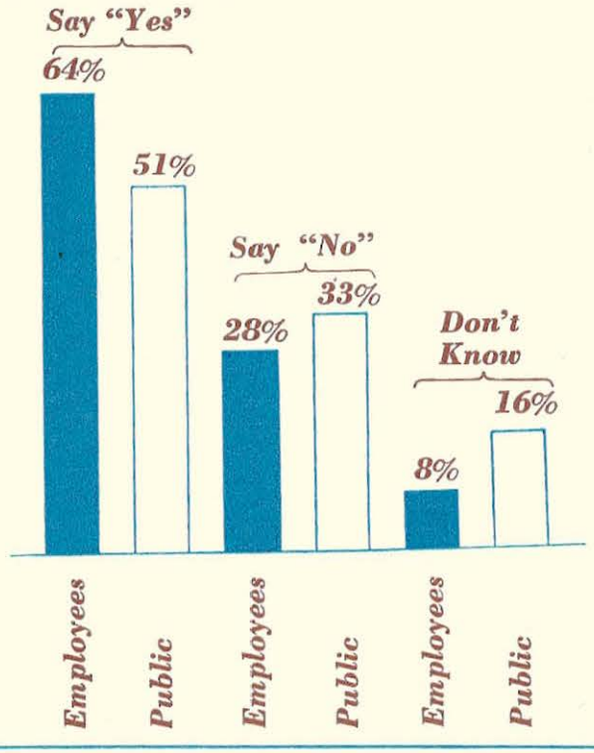
So little importance is, apparently, attached by em-

ployees to the contribution of politics to the competitive difficulties which the railroads encounter that only one employee out of six was able to name a candidate for public office (local or state) whom the employee believed to be in favor of policies to assure fair competitive conditions in transportation.

And yet—despite the evident lack of definite understanding by employees of the principal source of the railways' competitive difficulties and, hence, of the means and the place where correction must be forthcoming if such dangers are to be mitigated—there is a substantial minority (42 per cent) who believe that competition is going to bring hard times to the railroads

Is Competition Fair?

Here is how employees and general public answer question: Before the war did the railroads have a chance to earn a profit equal to that enjoyed by other forms of transportation?



and their employees. On the other hand, almost 3 employees out of 4 believe that railroad management is doing all it can to meet this competition; hence the viewpoint of a considerable number of employees is rather fatalistic—they conceive that the situation is serious but they do not know of anything that can be done about it.

Such data appear to justify the conclusion that a substantial proportion of railroad employees would be receptive to an explanation of the railroads' competitive situation in terms of the diagnosis which prevails among most students of the transportation situation, viz., that the railroads' primary need is equality—relative to all other forms of long-haul transportation—in taxation, in their degree of self-support, and in regulation; and that, given such equality, the industry might look forward to a future as prosperous as that of any other well-established and economically useful enterprise.

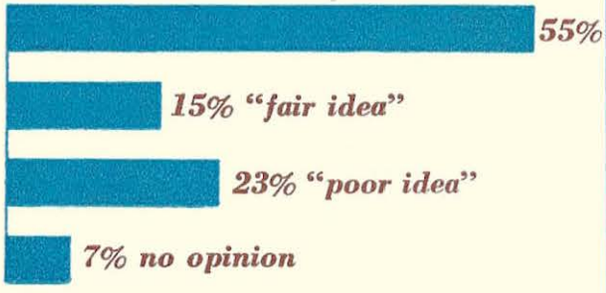
The A. A. R. public opinion survey, mentioned heretofore, showed that the public appreciates the importance of railroads and wishes them well—but is unaware that their well-being is in any way threatened. The *Railway Age* survey of railway employee opinion discloses loyalty to the industry and pride in its accomplishments, plus substantial misgivings as to the future. That is to say, the employees share with the general public a feeling of good will toward the railroads and a realization of the public importance of the industry—but the employees are more apprehensive as to the future of the industry than the general public is.

"Federal Aid"

Only 61 per cent of employees have heard of "federal aid" appropriations for highways and airways.

Transport Subsidies Approved

Of railroad men who have heard of "federal aid" to other forms of transportation, 55% say it is a "good idea".



The employees are aware of inequality in taxation as between the railroads and rival agencies of transport, but, seemingly, do not ascribe any special significance to this factor. If, as most persons who have informed themselves on the railways' competitive situation believe,

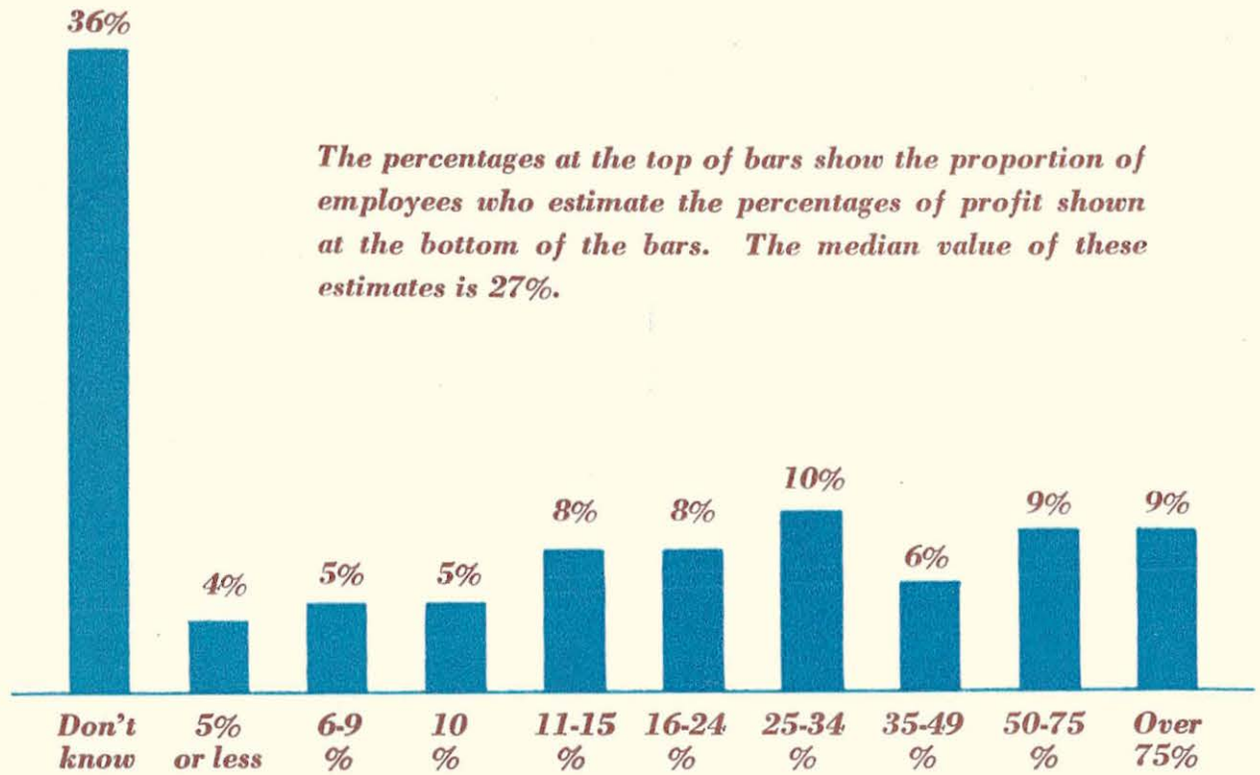
the establishment of a greater degree of equality in taxation and self-support among all agencies is essential to any enduring and dependable prospect for railroad prosperity, then it is evident that considerable public and employee education in the basic economics of transportation will be required. In such an effort, obviously, the employees should come first, since it is quite unlikely that the public in general will be sufficiently interested to learn more about the transportation business than people actually engaged in it.

Friendliness to Industry Is Employees' Basic Attitude

As indicated at the outset of this report, the central characteristic of this survey is its revelation of the basic friendliness of railroad employees to their industry. They appear to esteem it for its accomplishments in war-time. It has already been noted that five out of eight employees would enter the railroad industry all over again, if they had their lives to live over. The employees think well, also, of their superiors. Asked to name the highest officer of their company whom they had met or talked with, 30 per cent mentioned a president or vice-president, and an additional 44 per cent mentioned a general manager, general superintendent or superintendent; only 6 per cent expressed a poor opinion of the ranking officer they had met. Practically nine out of ten employees have a definitely favorable impression of the top management of their company so far as it is known to them. Of their immediate superiors—foremen and supervisors—only one employee in 20 expressed an unfavorable opinion, while two-thirds of the employees questioned rated their foreman as "good."

In a survey of opinion of employees of the manufacturing industry—sponsored by the magazine "Factory" and conducted, as the *Railway Age* survey has been, by the Opinion Research Corporation—respondents were asked to state their opinion of their union leadership. In the *Railway Age* survey no such question was asked because, in the railroad industry, unlike manufacturing, there is no compulsory union membership—no "closed shop," no "maintenance of membership," no "check off." Under such conditions of complete freedom, the membership of an overwhelming

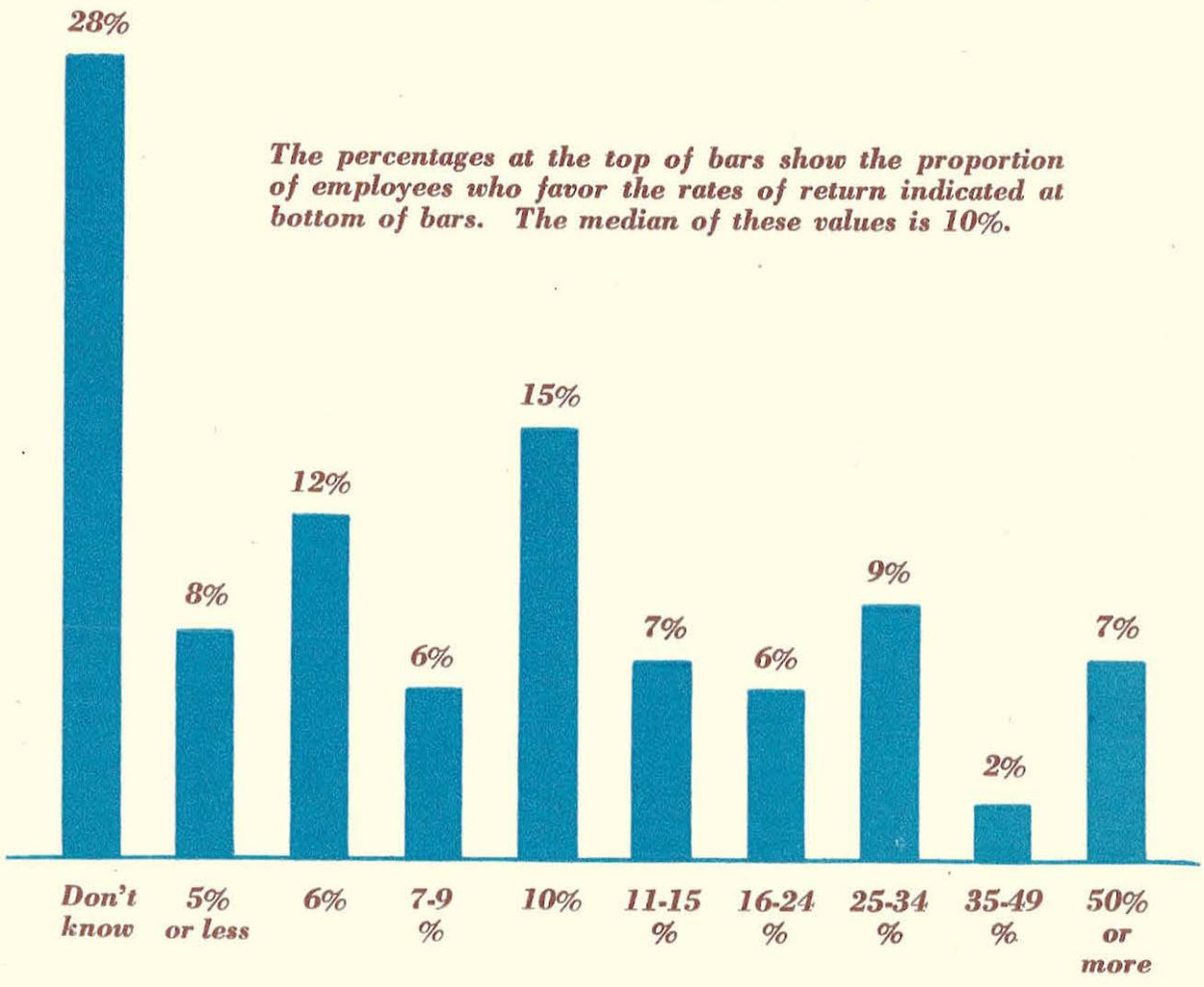
The Rate of Profit Employees Believe the Railroads Earned in 1944



The percentages at the top of bars show the proportion of employees who estimate the percentages of profit shown at the bottom of the bars. The median value of these estimates is 27%.

(Interstate Commerce Commission statistics show that the rate of return earned on the investment in railroad property in 1944 was 4.18%)

The Rate of Profit on Investment Employees Believe the Railroads Should Be Allowed to Earn



majority of railway employees in labor organizations is sufficient evidence of their confidence in and loyalty to those organizations. Since the number of questions which an interviewer can ask a respondent is limited, the *Railway Age* survey did not go into matters about which reliable quantitative information was already available.

Not only do overwhelming majorities of railroad employees respect the qualifications of their superiors—at both the top and the supervisory levels—but they think well of the performance of their industry as a whole. Nine employees out of ten say the industry did the best war job it could have done—and less than one employee out of ten believes that a better job would have been done under government operation; while almost two-thirds of employees believe that a definitely worse job would have been done if the government had taken over the railroads. For peace-time, employee sentiment in favor of government operation can almost be said not to exist—only 3 per cent of employees expressing a definite preference for such an innovation.

Beliefs About the Investors' Share

With all their loyalty to their industry and approval of its war-time accomplishments, it cannot be said that employees' knowledge of the economic situation of their industry from a standpoint of capital supply is remarkable for its extent or accuracy.

More than one-third of the employees questioned in this survey would not even try to estimate the present rate of railroad profits, although 93 per cent said the railroads are now making a profit. Asked to hazard a guess as to railroad profits "last year" (the question was asked in December, 1945), those who accepted the invitation ranged in their estimates all the

way from 5 per cent or less to more than 75 per cent, with the median of the guesses being 27 per cent.

The true measure of profit is the return earned on "venture capital," i. e., on stock, but popular opinion sometimes considers profit to be the ratio of earnings on total investment or on the ratio of stockholders' earnings to total "turnover" (gross revenues). The annual report of the Interstate Commerce Commission for 1945 shows that 1944 net income (i. e., after taxes and interest) was 7.76 per cent of stock and that actual dividends were 3.09 per cent of stock. Net railway operating income (i. e., after taxes but before payment of interest) was 4.18 per cent of the investment in railroad property and net income was 7.77 per cent of gross revenues. Whichever one of these ratios be taken as the measure of railroad "profit," however, it is evident that the actual rate, even in such a relatively prosperous year as 1944, is far lower than the median of 27 per cent of the opinion of employees as to the size of the owners' share in railroad earnings.

Consider 10 Per Cent a Reasonable Return

Even more noteworthy is the revelation of this survey that 73 per cent of employees believe that the railroads "made a profit" throughout the depression and, furthermore, the employees are quite generous in the rate of profit they believe the railroads should earn. Their opinions range all the way from less than 5 per cent to more than 50 per cent, with a median at 10 per cent.

Profit being accurately defined as the reward of "venture capital," i. e., the return to stockholders on their investment, the Interstate Commerce Commission's annual reports list the net income available to railroad stockholders at the following percentages to stock outstanding during the 15 years prior to 1945:

Year	Per cent Net Income to Stock	Year	Per cent Net Income to Stock
1930	5.77	1938	Deficit
1931	1.69	1939	1.44
1932	Deficit	1940	2.49
1933	0.26	1941	5.87
1934	0.23	1942	10.45
1935	0.53	1943	10.03
1936	2.23	1944	7.76
1937	1.49		

The Interstate Commerce Commission annual reports also show the following average rates of dividends on all stock for the 15-year period:

Year	Average Dividend (%)	Year	Average Dividend (%)
1930	6.02	1938	1.39
1931	4.01	1939	1.84
1932	1.50	1940	2.22
1933	1.58	1941	2.52
1934	2.13	1942	2.67
1935	2.04	1943	2.83
1936	2.33	1944	3.09
1937	2.32		

The I. C. C. reports further reveal that the following percentages of outstanding railroad stocks have received no dividends whatever in the past 15 years:

Year	Per Cent of Stocks Receiving No Dividends	Year	Per Cent of Stocks Receiving No Dividends
1930	23.07	1938	67.93
1931	26.80	1939	67.36
1932	67.15	1940	61.71
1933	68.89	1941	59.35
1934	65.74	1942	43.63
1935	65.61	1943	42.03
1936	63.80	1944	41.54
1937	60.36		

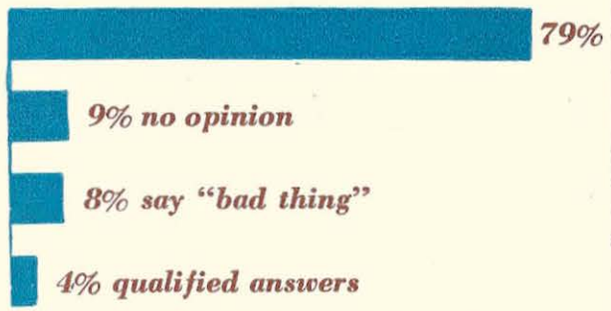
Half of the employees (51 per cent) say either (16 per cent) that they do not know whether employees or stockholders get the larger share of the revenue dollar or (35 per cent) that the stockholders get the larger share, while 46 per cent correctly name the employees and 3 per cent are noncommittal.

The I. C. C. reports the percentage of the revenue dollar paid out to employees during the past decade as follows (with the dividends paid to stockholders shown alongside, computed from I. C. C. statistics):

Year	Per cent of Revenue Paid in Wages	Per cent of Revenue Paid in Dividends
1935	47.62	5.87
1936	45.61	5.72
1937	47.66	5.46
1938	48.97	3.82
1939	46.64	4.49
1940	45.71	5.04
1941	43.61	4.48
1942	39.27	3.40
1943	38.88	2.91
1944	40.88	3.10

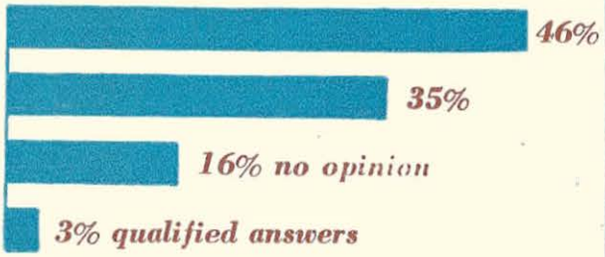
"Full Crews" Favored

79% of employees believe that "full crew" requirements are "a good thing for the railroads".



How Are Earnings Shared?

46 per cent of employees say that employees get the larger share of railroad revenue, while 35% say that the stockholders get the larger share.



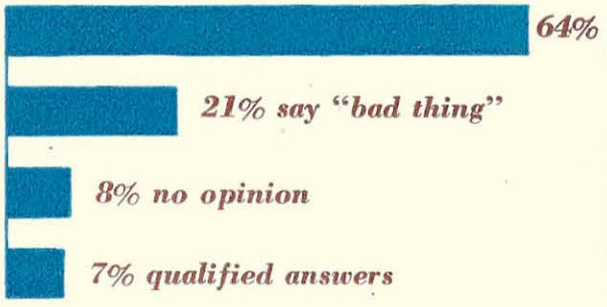
(I. C. C. figures indicate that wages were approximately 41% of 1944 railroad revenues and that dividends to stockholders were slightly more than 3%).

Further evidence bearing on the employees' knowledge of the importance of a supply of capital to the railroads in enabling the industry to provide gainful employment is given in the answers when respondents were asked to estimate how much capital the railroad industry had invested per employee. Only 51 per cent of those asked ventured to offer an estimate, with the answers ranging all the way from less than $1,000 to more than $100,000, and with the answers showing little tendency to centralize about any one value. The median of the answers was $9,300.

In 1944 the railways' investment was $26,631,654,000, according to the I. C. C. 1945 annual report, and the average number of employees was 1,414,776, making the average investment per employee $18,824.

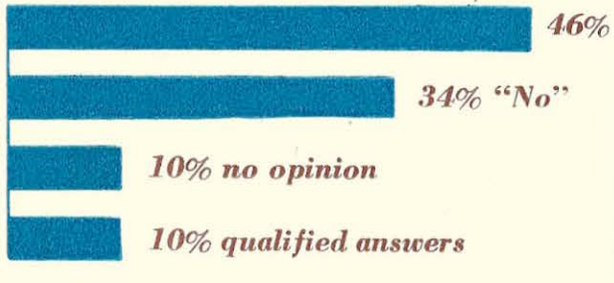
Train Limitation

64% of employees believe it would be a "good thing" to place a regulatory limit on the number of cars permitted in a train.



Labor-Saving Machinery

46% of respondents favor adoption of new machines which require fewer employees than those formerly needed.



In "Labor's Monthly Survey," issued in January, 1945, by the American Federation of Labor, under the heading "Four Commandments of Progressive Collective Bargaining," the following advice in part is given to organized employees:

"Know your industry and know your company. Get such facts as: Costs of operation, outlook for sales and production, particular problems of your company industry, past profits and prospective profits. Know what a wage increase will cost and what the company can pay. . . .

". . . reserves must be laid aside to buy new machinery which will increase productivity and make further wage gains possible; and investors must receive enough return on their investment to bring your company adequate financing. You cannot expect all the profit to go into wage increases.

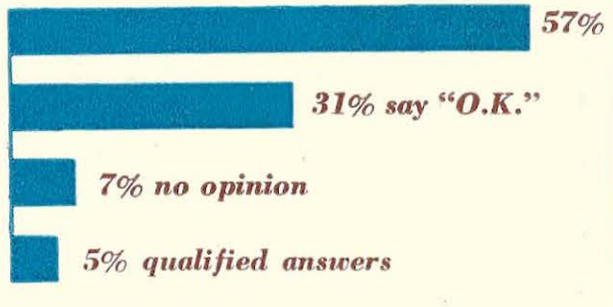
"Work to improve production per man-hour, so there will be more income to share. . . ."

The foregoing quotation, no doubt, would be subscribed to by most of the railway labor organizations, since most of them are affiliated with the American Federation of Labor. There may be some question, however, from the status of employee knowledge of the railroads' financial problems as revealed by this survey, whether these principles are as yet fully comprehended and practiced by the majority of railroad employees. The same question may be raised, particularly, of the A. F. of L. advice to "improve production per man-hour" in the light of the opinion of railroad employees on "full crew" and other such limitations on output per employee as disclosed hereinafter.

The belief was expressed by 79 per cent of the respondents in this survey that a "full crew" requirement is a "good thing for the railroads" and 64 per cent think that limitation of the length of trains would also be "a good thing." Trainmen, enginemen, and yard employees voted 79 per cent and 75 per cent, respectively, in the affirmative on these two questions. Asked whether they thought that such restrictions would force the railroads to increase rates and thus drive away traffic. half of all employees answered in the negative; 20 per cent said they did not know; and 12 per cent believed that these restrictions would discourage traffic, but favored them anyhow.

Pensions

57% of employees say present railroad pension arrangements are unsatisfactory.



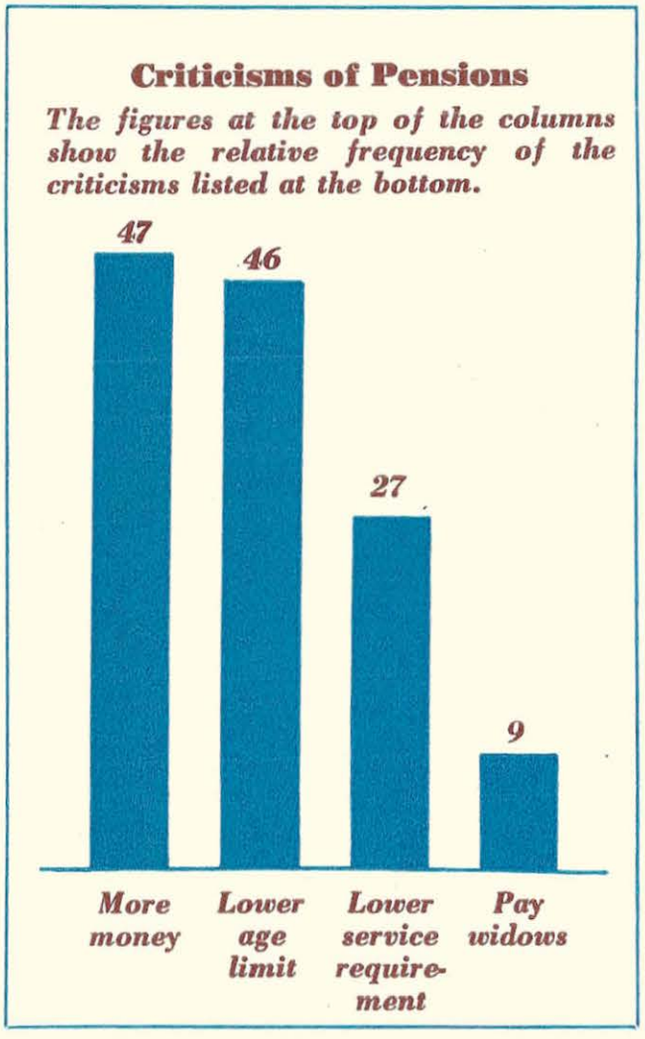
On the matter of the use of labor-saving machinery, however, employee opinion is more favorably inclined—46 per cent of respondents favor the introduction of such machinery, even where it results in displacing employees; 34 per cent oppose improved machinery; 10 per cent qualify their answers; and 10 per cent express no opinion.

Also bearing on the question of railroad employees' economic ideas are their answers to the question: "What might be done to make your job more satisfactory?"

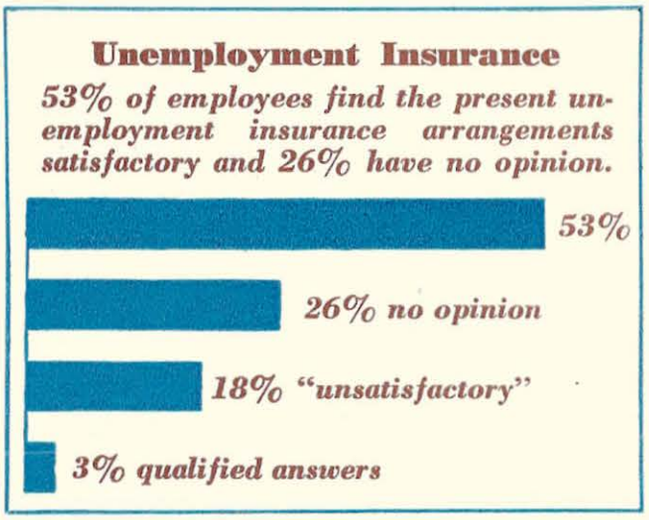
Only One in Five Asks for Higher Wages

Only 21 per cent of respondents mentioned higher wages; an equal ratio named better working conditions; 18 per cent asked for better hours of work. Half of the employees stated that they were satisfied with their jobs and had no suggestions to offer for improving them.

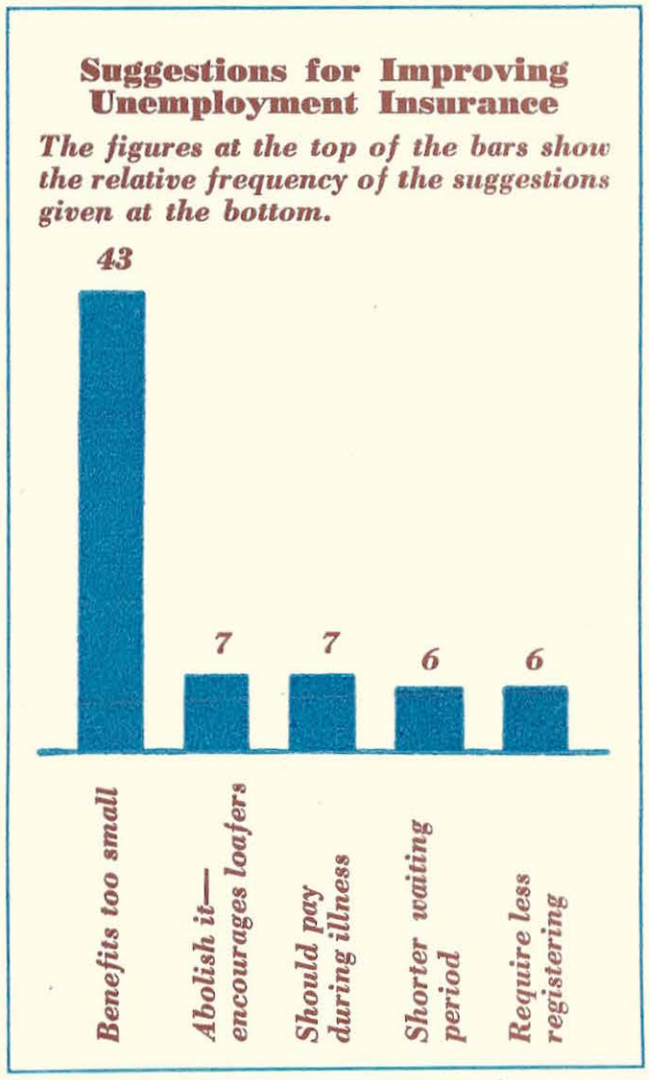
Compared with this evidence of relatively moderate interest in higher wages and improved working conditions, the answers received on the subject of pensions



may occasion some surprise. As is generally known, railroad pensions—which may run up to $120 monthly—are more generous than the $85 maximum provided for other citizens under the Social Security Act (although somewhat less liberal in auxiliary benefits to a pensioner's survivors). Nevertheless, this opinion survey among railroad employees found 57 per cent dissatisfied with present railroad pension arrangements; only 31 per cent satisfied with them; while 7 per cent had no opinion and 5 per cent gave qualified answers. The principal criticisms of the pension system in the order of their importance (with numerical weights to show the relative number of times each criticism was mentioned) are as follows: Payments not large enough


Unemployment Insurance
53% of employees find the present unemployment insurance arrangements satisfactory and 26% have no opinion.
53%
26% no opinion
18% "unsatisfactory"
3% qualified answers

(47); lower the age limit (46); reduce the length-of-service requirements (27); should pay compensation to a widow or child (9) (a widow can now draw a pension



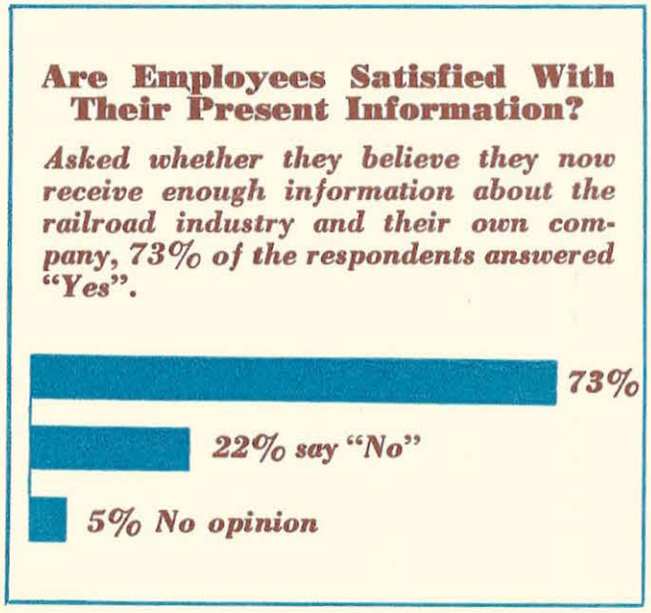
only if the pensioner's own benefits are reduced).

The unemployment insurance system on the railroads—paid for entirely by the railroads by a 3 per cent tax on payrolls, and which has piled up a fund of almost $700 million because the tax on the railroads so greatly exceeds the occasion, so far, for unemployment compensation—is not well understood by many railroad employees. In fact, 51 per cent of them believe that employees contribute to this fund, and only 31 per cent realize that the whole cost is paid by the railroads. A little more than half of the employees (53 per cent) say that the present arrangement for unemployment insurance is satisfactory; 26 per cent have no opinion of it (many of them volunteering the comment that they have had no occasion to find out about it since they have not had to use it); 18 per cent say the arrangement is unsatisfactory; and 3 per cent express a qualified opinion.

Among the 18 per cent who are dissatisfied with the present provisions for this insurance, by far the most important complaint is in the amount of the benefits. Other criticisms, much less frequently mentioned, include the contention that the benefits should cover time lost through illness—while an equal number of respondents believe this insurance should be abolished because, as they say, "it encourages loafers."

Where Do Ideas About the Railroads Originate?

The Opinion Research Corporation, while finding that railroad employees are aware of the excellent performance given by the railroads during the war and that most of them like their work, nevertheless concludes that there is evidence of a considerable degree of misinformation or lack of information. "One of the biggest problems to overcome in any educational campaign directed at employees," it says, "is the belief most of them now have that they are sufficiently informed about the railroad business."


Are Employees Satisfied With Their Present Information?
Asked whether they believe they now receive enough information about the railroad industry and their own company, 73% of the respondents answered "Yes".
73%
22% say "No"
5% No opinion

Three railroad employees out of four (73 per cent) believe that they now receive enough information about the railroads; only 22 per cent think they do not receive enough information; and 5 per cent do not know whether they do or not.

The principal sources of their information about the railroads which employees name (with the relative frequency of mention of each source) are as follows: newspapers and general magazines (42); bulletins, pamphlets, and notices (37); fellow workers (29); company magazines and newspapers (16); railroad industry publications (15); union publications (15).

Asked to express their preference for magazines or newspapers issued especially for railroad men, 27 per cent of those questioned could not name any publication that they particularly liked; 23 per cent named their company magazine; 16 per cent specified their union publication; 11 per cent mentioned specific craft magazines (having in mind, presumably, such departmental publications as *Railway Mechanical Engineer* or *Railway Engineering & Maintenance*); *Railway Age* was named by 9 per cent. Since *Railway Age* does not circulate to any extent among railway employees in the ranks, its mention by as high a percentage of employees as this appears larger than might reasonably be expected.

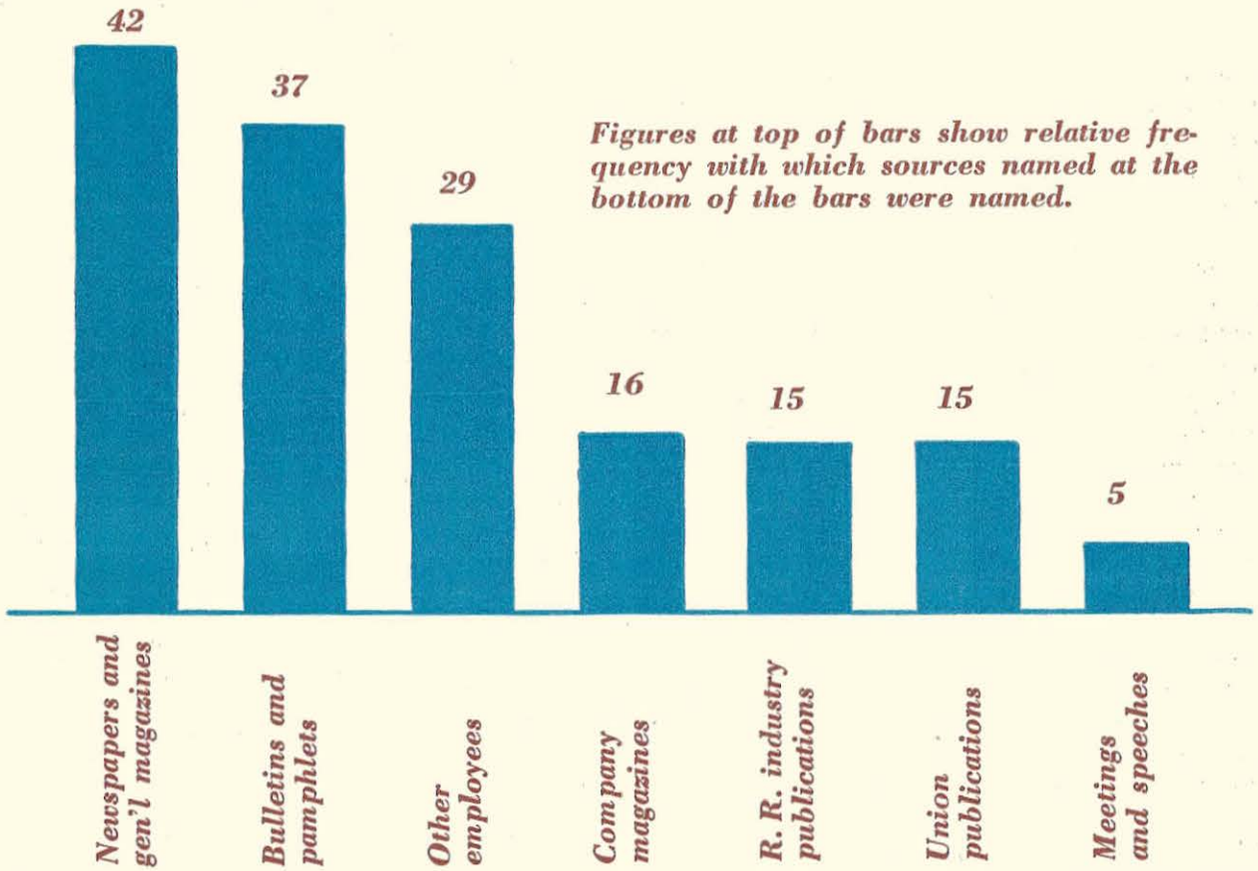
The Survey Plan

This Opinion Research Corporation's survey of railroad employee opinion is based on a total of 1309 personal interviews with a representative cross-section of all types of railroad workers, with the exception of section hands and gang laborers who were purposely excluded from the survey. This exclusion was made because of language and other difficulties which, it was expected, would be encountered in interviewing a large proportion of these laborers; and on two assumptions, viz., (1) that many of these employees were war-time acquisitions with only limited opportunity, as yet, to form definite convictions about railroad work and (2) that, where these employees had concrete opinions about the railroad business, there was no reason to suspect that such opinions would be materially different from those of other employees. In short, it was believed that a reliable cross-section of employee opinion could be secured with the omission of these employees and, since their inclusion would have been difficult and expensive, they were omitted.

Interstate Commerce Commission wage statistics bulletins and data from the Bureau of the Census were

Sources of Employee Information

Respondents were asked to name the principal sources of their information about the railroad industry, and their own company, and this chart portrays their answers.



Figures at top of bars show relative frequency with which sources named at the bottom of the bars were named.

used as guides in determining the correct proportions of the different classifications of railroad employees to interview and the localities in which to do the interviewing.

Interviewing was confined to counties which in April, 1940, had either (a) 4 per cent or more of their male-worker population employed in railroad work or (b) more than 1000 male railroad workers. Such counties, although numbering less than 600 of the 3070 U. S. county total, included about 78 per cent of all railroad employees in the country. Consequently, it was possible at a considerable saving of time and expense to select the sample in places having some concentration of railroad employees, while maintaining a reasonably complete coverage.

If a sample is to reflect accurately the views of the total population, it must have the same proportion of old and young, office workers and shop workers, etc., as the total population. The following table compares the sample and the total population it is meant to represent. It will be noted that the two coincide closely.

Groups of Employees	% Each Class Is of Sample	% Each Class Is of Total R.R. Employees
Officials and clerks	17%	15%
Way and structure workers	9	8
Shop and stores workers	32	34
Train and yard crews	30	29
Other transportation workers	12	14
Under 45 years of age	47%	50%
45 years and over	53	50
East	32%	34%
Midwest	35	36
South	17	18
Far West	16	12

Every survey based on less than 100 per cent enumeration of the population under study is subject to a certain error due to the size of the sample. This error, however, can be calculated by standard methods.

For example, in this survey 89 per cent of the total respondents say that the railroads did the best war-time job of transportation that they could have done. In a sample of this size (1309 cases), based on a representative cross-section, the chances are 99 out of 100 that any error due to size of sample would not exceed 3.3 per cent. In other words, if all railroad workers in the United States in the classifications under consideration were to be interviewed, those believing that the railroads did the best possible war-time job would almost certainly comprise between 87 per cent and 91 per cent.

For practical purposes, therefore, it can be stated that

the sample is of adequate size, and the taking of additional cases would not have changed the results to any significant degree.

In Summary

In recapitulation, the data set down in the foregoing appear to justify the following significant conclusions (among others):

1. Most railroad employees like railroad work—it is "in their blood." The complaints they have are, for the most part, not unavoidably inherent in railroading, but are incidental and remediable, at least in part.

2. Railroad employees are almost unanimous in a favorable appraisal of the war-time job their industry has done. Two-thirds of them believe the government would have done a worse job than private management did, if government operation had been resorted to, as it was in World War I; and less than one employee in ten believes that the government would have done a better job of war-time railroading than private management did. For peace-time, only 3 per cent of employees believe government could do a better job of railroading than private management.

3. Management—both at higher levels and in the supervisory and foremanship grades—has the respect of the men in the ranks. Only about one employee in twenty has a definitely unfavorable opinion of his foreman and of the highest ranking officer of his company with whom he is personally acquainted.

4. At the time this canvass of employees was made (December, 1945), there did not seem to be much dissatisfaction with the wages being paid for railroad work. Asked the question: "Is there any change that management could make which would make your job more satisfactory?"—49 per cent answered "No"; and, among the suggestions for improvement by the 45 per cent who had such suggestions to make, more convenient hours and better working conditions were (taken together) mentioned almost twice as frequently as more money. Wishes for better tools and equipment and better relations with management (also taken together) occurred more frequently than did those for higher wages.

5. More than half of the employees (about three out of five) are dissatisfied with the present pension arrangements, and their principal criticisms are that the payments are inadequate and that the retirement age should be lowered. The third most important criticism (which, however, occurred only about half as frequently as either of the other two) was that length-of-service requirements should be reduced. The matter of paying benefits to dependents was mentioned, but with only one-third the frequency of the criticisms of length-of-service requirements and only one-fifth as often as the complaints either about the amount of benefits or in advocacy of lowering the retirement age.

6. More than half of the employees are satisfied with unemployment insurance arrangements as they exist at present, and less than one employee in five is dissatisfied with them; but, on the other hand, one employee in four has no opinion at all on the subject. Only one employee in three realizes that unemployment insurance costs him nothing, and that it is supported entirely by a payroll tax levied on the railroads.

7. On the question of the status of their investor-partners in the railroad business the employees' ideas appear to be highly indefinite. Their average (median) estimate of the amount of investment money required to provide a job for an employee in railroad work is just about half the actual amount. One employee in three has no idea at all of the return earned on the investment in railroad property "last year" (i. e., 1944, since the questioning was done last December); and another employee in three estimates this return at a fantastic level of 25 per cent or more. Only 4 per cent of the employees give an estimate which conforms with the fact that the return was "5 per cent or less."

8. While the employees are widely on the high side in their views of what the railroads are actually earning, they are quite generous also, on the average, in their estimate of the return they believe railroad investors *ought* to have. While one employee in five has no opinion on this question, the average (median) estimate of those who do have definite views is that the return on the investment should be 10 per cent. Less than one employee in ten would hold the railroads to the "5 per cent or less" which they actually earned, even in such a relatively prosperous year as 1944.

9. On the subject of prospective rivalry from other forms of transport, a substantial minority of employees are fearful and practically an equal number have no apprehension. Two-thirds of the employees recognize the difference, unfavorable to the railroads, in the comparative taxation of the rail carriers and those which operate on government-owned property—nevertheless an almost equal majority does not recognize any practical handicap in this situation to the railroads' ability to operate profitably, as compared with their rivals.

10. More employees are tolerant of labor-saving machinery than oppose it—but, at the same time, a large majority favors "full crew" and train limit restrictions on railroad operation.

11. Three employees out of four are satisfied with their present information about the railroad industry and their own companies; and only one employee in five is definitely dissatisfied with the information now available to him.

A further report of the results of this survey will be published in an early issue of *Railway Age*. This second article will deal, particularly, with opinions of employees on the quality of railway service and on their constructive suggestions for means to improve industrial relations on the railroads. Differences in replies because of age, occupation or territory were, generally speaking, not noteworthy in this survey—but a few of them are significant and will be reported in the forthcoming article.

Train Communication Finding Its Place

Baltimore & Ohio experience indicates how this new facility may be used to best advantage and gives definite direction to maintenance and power supply requirements

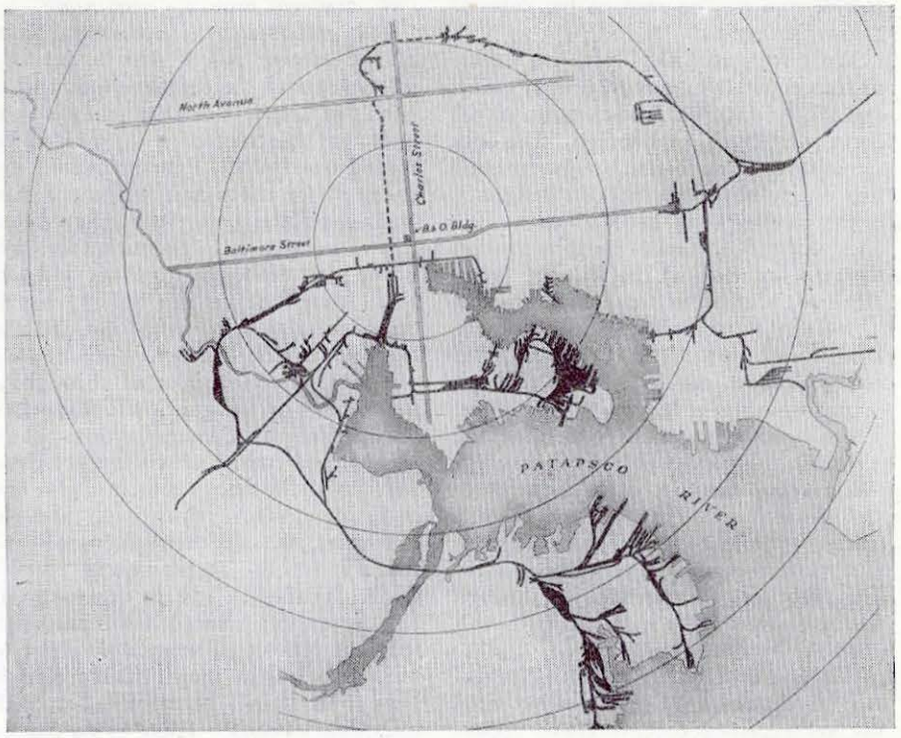
By L. J. PRENDERGAST

Superintendent Communications
Baltimore & Ohio

WE have made extensive radio train communication tests in the Baltimore, Md., terminal area. This, incidentally, is our largest and most important terminal point, consisting of 5 major yards with numerous transfer runs between them. A considerable number of interchange movements with foreign roads are made each day. One antenna used for the fixed station was located on the roof of the Baltimore & Ohio building, a 13-story structure near the geographic center of the downtown portion of the city. From this station it was possible to cover our entire Baltimore area. The frequency used for these tests was 156.25 megacycles.

Theoretically, radio transmission at frequencies in the neighborhood of 160 megacycles is supposed to have a "line of sight" range; that is, you transmit where you can see. Very early in our Baltimore tests it was quite apparent that we were receiving intelligible radio signals where "line of sight" conditions could not exist. As the tests progressed it became evident that large masonry buildings containing quantities of glass areas were acting as efficient reflectors. This resulted in multiple-path transmission and signal reinforcement, insuring perfectly usable signal levels entirely beyond the line of sight and under some of the worst imaginable conditions.

The results in the Baltimore area were sufficiently satisfactory to justify the management in authorizing the equipping of the railroad's New Castle, Pa., yard with radio to promote the efficiency of yard operation. New Castle is a large hump yard in which severe fog conditions frequently exist. The primary reason for installing the apparatus at New Castle was to use it for hump engine operation, and especially to keep the locomotives working in thick weather. It has been found, however, since the installation was made, that it is of value in communicating with the trimmer engine and has been used on some occasions to dispatch a switch engine to a line-of-road job to meet an emergency condition.



Satisfactory radio communication has been maintained between the Baltimore & Ohio building and all of the terminal area shown in the map

The transportation department of the Baltimore & Ohio is quite convinced that the use of radio in yard and terminal operations will result in sufficient tangible savings to make the installations attractive. We are not quite so convinced of the economic value of front-to-rear and wayside-to-train apparatus. It must be remembered that on the Baltimore & Ohio, as on most of the other eastern trunk line railroads, our heavy traffic is moving on multiple-track routes. The situation might be different if we were dealing largely with single-track operation on our heavy traffic density lines.

Equipment Used

The tests we have made and the permanent installation we have at New Castle have been made with apparatus manufactured by the Bendix Radio Division of the Bendix Aviation Corporation. The radio apparatus which is contained in a cast aluminum case is shock mounted. The assembly can be removed from the case for maintenance purposes and a new unit substituted in a matter of minutes. The power unit is mounted similarly to the radio equipment for easy replacement. The antenna consists of a counterpoise in the form of a cartwheel which is mounted directly on the roof of the car, caboose, or engine tender and from the center of which, and extending for 14 inches, is a vertical radiator used as the actual antenna. The sets we are using at present have two frequencies available both for transmitting and receiving, so there are two channels of communication.

Another advantage of VHF radio is that the wave length at 160 megacycles is about two meters long. The antennae used usually have a length of ¼ of a wave length, or ½ a meter. It means that the antenna as a vertical radiator is between 15 and 20 inches long. This is an important consideration in railroad service because of the close clearances ordinarily encountered. In fact, some recent tests we have been conducting on passenger equipment indicate that with an antenna 14 inches high we will have difficulty in meeting clearance conditions on our railroad. At one

This article is an abstract of a paper presented before the Southern and Southwestern Railway Club, Atlanta, Ga., January 17, 1946.

point maximum clearance is just 15 ft. and at several points is between 15 ft. 3 in. and 15 ft. 6 in. On most passenger cars the roof is 14 ft. above the rail and it appears that the problem of installation on passenger equipment is one to which more study will have to be given. In the case of cabooses and locomotives, the clearance requirements are less stringent, because the antenna can be mounted on the tender of the locomotive and on the roof of the caboose below the cupola.

We have made tests covering front-to-rear communication on freight trains and these tests also, from a radio standpoint, were very satisfactory. The only time that communication was interrupted was when the train was in a tunnel. Some thought has been given to the question of continuous communication through tunnels and the Bendix Radio Division is at present conducting a test in a 2,700-ft. tunnel on the Baltimore Division of the B. & O. to determine if communication can be effected through tunnels as long, or longer, than this one. There is some question concerning the economic advantage of assuring reception through tunnels, since they represent such a small percentage of our total road-mileage. My observation is that while the problem of successful radio reception and transmission through tunnels is not insurmountable, it will probably be quite costly.

We have ordered ten "Walkie-Talkie" sets for experimental purposes but have not yet received them. There apparently are many places in railroad operation where small sets of this type may fill a long-felt need. Signal maintainers, in adjusting the shunt resistance of track circuits, may use them to talk back and forth between the battery location and the location of the shunt resistance. Signal maintainers could also use them effectively in focusing automatic block signals. The foreman of a relief train might utilize such a medium of communication to good advantage in talking to his force at derailments, and section forces could probably make good use of them in numerous ways.

Who Will Maintain Radio?

The question of maintenance of this equipment is an important one and the subject has been investigated by the Eastern Conference Committee. On the Baltimore & Ohio, and I think on most of the other eastern railroads, the motive power department will be responsible for the installation and maintenance of the radio apparatus on locomotives, cabooses, and all other rolling stock. The communications department will be responsible for the installation and maintenance of apparatus at all fixed locations. One of the requirements of the Federal Communications Commission is that only persons holding at least a second-class telephone or telegraph operator's license may make any adjustments to the transmitter equipment or repair any defects which may appear in the transmitters. On our railroad, such licensed personnel will be largely confined to employees of the communications department. We have several such employees on our payroll now, and will probably need more.

It is proposed that the electrical force of the motive power department will merely replace the defective unit with a good one held in stock for that purpose, and that the defective apparatus be turned over to the communications department for check and repair at a centralized service shop. It is believed that this will enable us to maintain these sets in the most economical manner and will avoid complications with shop electricians, many of whom could not pass the tests for federal licenses.

The tests are conducted throughout the country by the local radio inspectors of the Federal Communications Commission and consist of written examinations in radio theory and in radio law and Commission regulations, and—in the case of telegraph licenses—proficiency in the International Morse Code. While the test is not too difficult for an experienced radio mechanic, it might present substantial difficulty to one, especially a more elderly electrician, who is not at all familiar with electronic circuits. There is no charge for the test, nor for the issuance of the license.

Commission Requirements

The Federal Communications Commission has recently issued two important orders concerning railroad radio. Its Order No. 126, dated August 21, 1945, provides that railroad personnel using radio transmitters and receivers in the usual course of their business need not be licensed by the Commission but must be examined by the railroad rules examiner at biennial intervals on simple rules relating to radio, with which the Commission feels all persons using a transmitter should be familiar. Records of such examinations must be kept by the railroad and these records are subject to periodic inspection by a representative of the Commission. This concession on the part of the Commission represents the first time it has waived its usual requirements that all persons using radio transmitters must be licensed directly by it. The other order, issued December 20, 1945, embodies the actual operating and technical requirements under which railroad radio service must be carried out. The rules were worked out through the cooperation of the Association of American Railroads and the staff of the Federal Communications Commission, and are sufficiently broad so that no railroad should feel alarmed concerning any of their provisions.

Power Supply

The question of power supply for radio sets located on railroad rolling stock is one that has received considerable attention in the past year. The Mechanical Division of the A. A. R. has had a sub-committee actively working on this program and some progress has been made by it. The Communications Section and the Mechanical Division have held joint committee meetings and it has been decided, as an association policy, that all transmitters and receivers, both for fixed stations and for installation on rolling stock, shall operate at a voltage of 117 volts a.c., 60 cycles. This decision, of course, is a compromise between several conflicting opinions and reasons. The advantages gained by standardizing on this voltage are that all of the sets, both at fixed stations and on rolling stock, are completely interchangeable; and that no conversion equipment is necessary at test benches where service work is performed. It assists the set manufacturers in standardizing and permits the railroads greater ease in making comparative tests between sets.

Rolling stock at the present time will ordinarily have a 32-volt d.c. supply on passenger equipment and on steam locomotives. The supply on Diesels varies, but 64 volts and 110 volts are relatively common. It is thought that in the case of steam locomotives, independent turbo-generators supplying 110 volts a. c.. may be used, and I understand that one of the larger manufacturers is prepared to offer a turbo-generator with dual windings so that a single generator may supply 32 volts d. c. and 117 volts a. c.

The question of an adequate power supply on cabooses is one of the most difficult problems which must be worked out by the mechanical and electrical engineers as radio installations come into wider use on this class of equipment. Some progress has been made but considerable difference of opinion exists concerning the best method of accomplishing the results. Storage batteries employing terminal charging only are advocated by some. One or more roads have used small gasoline-driven generators. The presence of gasoline in cabooses is unsatisfactory from a fire hazard standpoint, and some experiments have been made in the use of a small Diesel engine and also an engine operated by butane gas. The question of cost, and the operating requirements of cabooses, i.e., the slow operating speed

(*Continued on page 468*)

Burlington to Test Refrigerator Cars

Two cars are equipped with forced and natural air circulation and end and overhead ice bunkers for comparative test purposes

TO gain added information on basic problems of transporting perishables, the Chicago, Burlington & Quincy has recently placed in service two refrigerator cars, built at the Plattsmouth, Neb., shops of the Burlington Refrigerator Express Company. Each car incorporates advanced ideas in the protection of perishables while in transit by rail. In actual use, these cars will provide practical tests of a number of important new devices, including fan-type air circulation, overhead ice bunkers, heaters and numerous other features.

The cars will be used in a research and testing program conducted under the direction of a committee representing shippers and receivers, the Association of American Railroads, the United States Department of Agriculture, refrigerator car owners and other agencies. This committee expects to develop recommendations for an improved all-purpose refrigerator car which will include certain new features already known to be practicable and others which demonstrate their value in comparative test service.

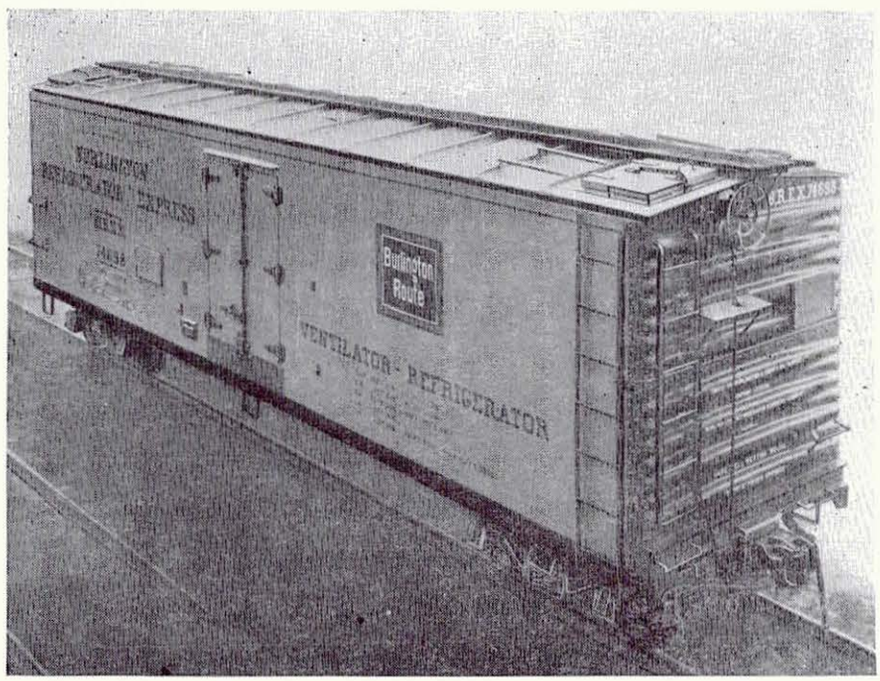
Identical Body Construction

Comparative structural features of the two test cars are shown in the table and differences in the ice bunker location and method of air circulation are shown in the drawings. Both cars have a nominal length of 40 ft. and identical body construction and insulation. The underframes are all-welded box girders, and copper-bearing steel side sheets are riveted to open-hearth steel posts. The insulation consists of 3½-in. blankets in the floor, sides and ends and 3½-in. panels in the roof. The inside width of each car is 8 ft. 3 in. and the door width 5 ft., or 1 ft. wider than in most refrigerator cars.

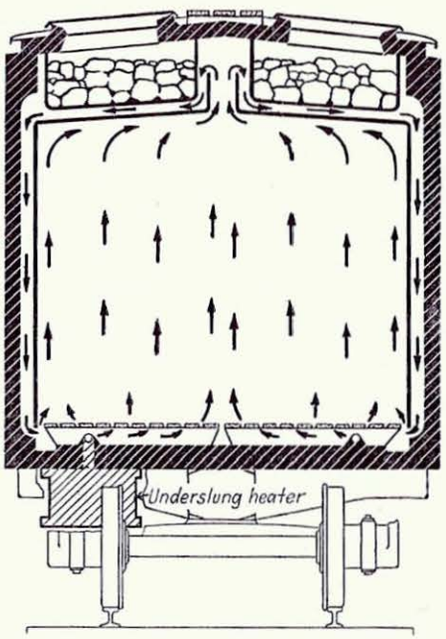
Both cars have electric lights mounted in the ceiling to facilitate inspection of commodities inside and to illuminate the interior while loading or unloading. Both cars are equipped with Liquid-

Construction of Two Burlington Refrigerator Express Test Cars

	End bunker	Overhead bunker
Type of car		
Nominal length	40 ft.	40 ft.
Bunker capacity, coarse ice	10,200 lb.	8,500 lb.
Inside loading		
Length, bulkheads in place	33 ft. 2¾ in.	39 ft. 10¾ in.
Length, bulkheads collapsed	37 ft. 4 in.	
Capacity, bulkheads in place	2,067 cu. ft.	2,263 cu. ft.
Capacity, bulkheads collapsed	2,322 cu. ft.	
Inside width	8 ft. 3 in.	8 ft. 3 in.
Inside height	7 ft. 6½ in.	6 ft. 10½ in.
Door width	5 ft.	5 ft.
Light weight of car	58,800 lb.	65,300 lb.
Trucks, A.A.R. snubber-equipped, Journal size	5-in. by 9-in.	5½-in. by 10-in.
Underframe	All-welded, box-girder	All welded, box-girder
Sides	Riveted c.b.s. sheets to o.h.s. posts	Riveted c.b.s. sheets to o.h.s. posts
Insulation, floor	3½-in. blanket	3½in. blanket
Sides and ends	3½-in. blanket	3½in. blanket
Roof	3½-in. panel	3½-in. panel
Fans	Air-circulating	None
Temp. indicating devices	Remote reading	Remote reading
Heating equipment	Portable heater	Underslung charcoal heater

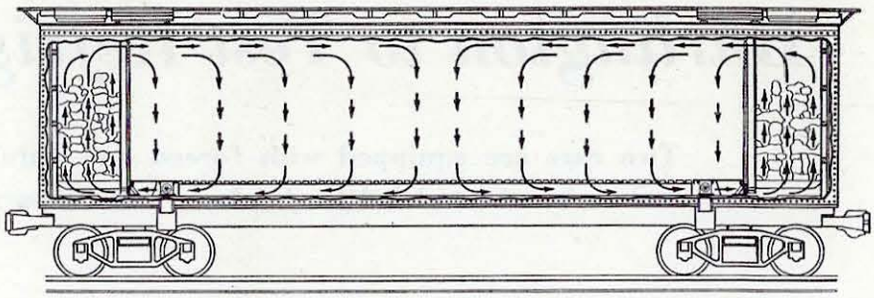


Burlington 40-ft. refrigerator car equipped with end ice bunkers and air-circulating fans



Natural transverse air circulation in the overhead bunker car

ometers, supplied by the W. K. Davidson Co., Montreal, Que., which show the ceiling and floor air temperatures prevailing inside the car. Inside air temperatures may be read from the outside without opening the car doors. Both cars may be ventilated by manipulating the combination hatch plugs and covers in the same manner as on conventional cars. Top or body-icing may be used in either car, if desired.



Air circulation in the end-bunker car with Preco circulating fans

Differences in the Two Cars

The principal differences in the two cars consist of the application of collapsible end ice bunkers, Preco air-circulating fans and portable heaters in the end-bunker car and overhead ice bunkers, natural air circulation and an underslung charcoal heater in the other car. The overhead bunkers are supplied by the Standard Railway Equipment Company. The charcoal heater, made by the Robert Mitchell Company, Ltd., Montreal, Que., is permanently installed under the car with suitable pipe connections to circulate a warm anti-freeze solution through tubing under the floor racks.

The end-bunker car has an inside height of 7 ft. 6½ in., or 3 in. higher than in most conventional refrigerator cars. The light weight of the car is 58,000 lb. and it is equipped with A. A. R. standard trucks having snubber springs and 5-in. by 9-in. journals.

The two ice bunkers are expanded-metal baskets, located one at each end of the car and suitable for water ice, water ice and salt, dry ice, or combinations of these. The bunkers, when full, have a capacity of 9,600 lb. of chunk ice, 10,200 lb. of coarse ice, or 10,600 lb. of crushed ice. For stage icing when the ice grates are raised, these capacities are reduced 50 per cent.

Four combined hatch plugs and covers are provided in the usual location. When heater service is desired, portable heaters of approved design burning either solid or liquid fuels, may be used in the bunkers.

The bunker bulkheads are adjustable to give increased loading space when refrigeration is not required. When both ice bunkers are collapsed, the loading space is increased from 2,067 to 2,322 cu. ft., or 12 per cent, this added space being available to accommodate heavier loads, or loads requiring ventilation or body-icing only. When only one bunker is needed to accommodate a portable heater, the other may be collapsed, thereby giving 6 per cent additional loading space.

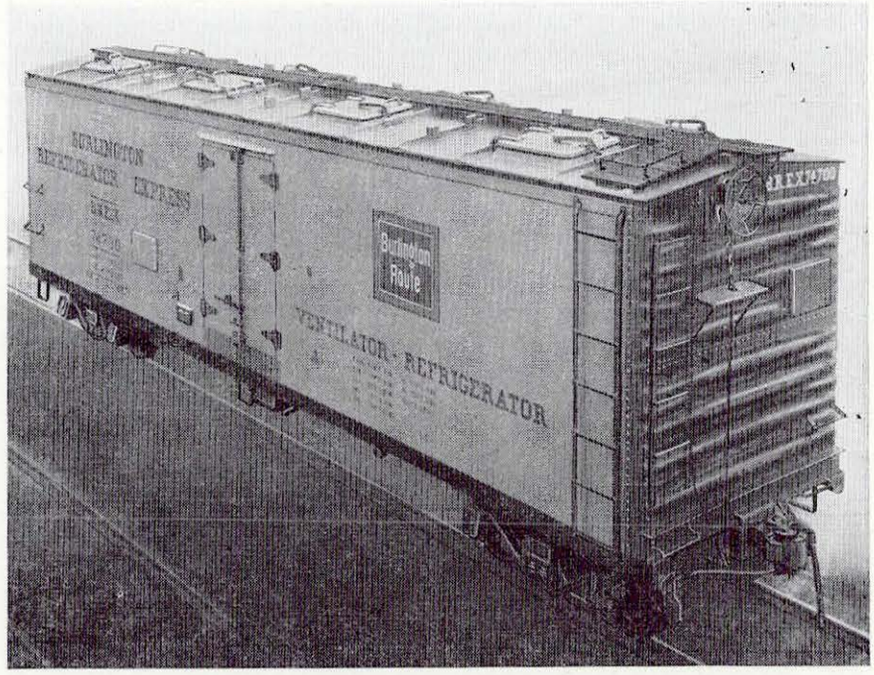
When the car is moving, the Preco blower fans operate under floor racks 7½ in. high to provide accelerated air circulation for refrigeration, ventilation, or artificial heat. The floor-rack tops are flush with the car doorway thresholds. When the car is standing at terminals where electric power is available, portable motors may be used to operate the fans. The air circulation in this car is upward through the ice bunkers, and thence lengthwise of the car, equalizing the temperatures of both air and lading. In end-bunker cars without fans, the natural direction of air flow is opposite to that shown in the drawing.

Overhead-Bunker Car

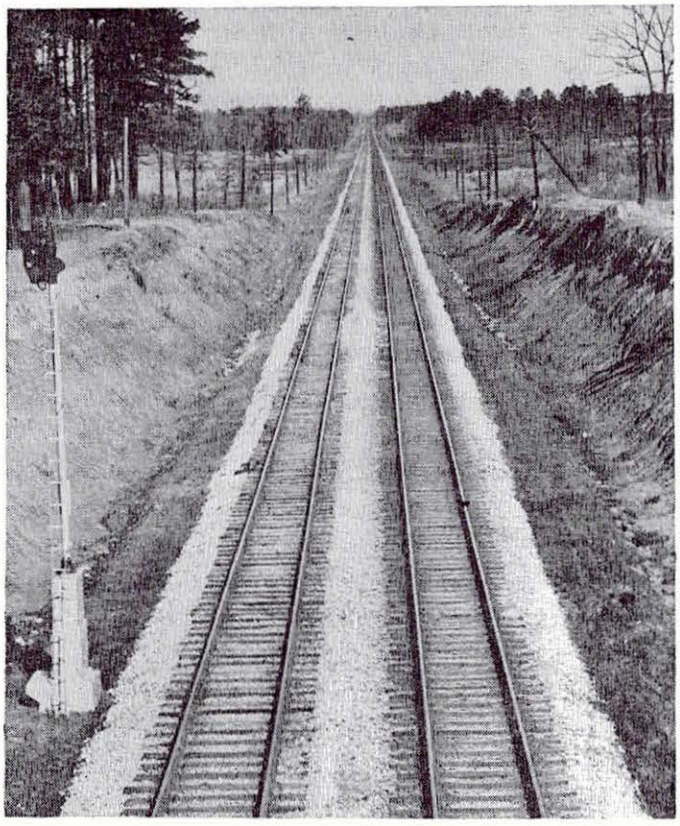
Air circulation in the overhead-bunker car is maintained by natural convection, and is transverse, as compared with longitudinal in end-bunker cars, either with or without fans. This is clearly shown in the drawing. Eight standard ice bunkers are shallow expanded-metal baskets suspended from the car ceiling. These bunkers are suitable to hold any type of ice or dry ice, as in the case of the other car. Drain boards and wall ducts protect the lading from ice meltage.

The bunker capacity with all bunkers full is 8,500 lb. of coarse ice. Stage-icing of the end-bunker car is simulated in this car by icing only selected overhead bunkers. For example, alternate bunkers may be iced. Combined hatch plugs and covers are installed, one for each of the eight hatchways. The floor racks are 4¾ in. high, with tops flush with car doorway thresholds.

The inside loading length of this car is 39 ft. 10¾ in. and the inside height 6 ft. 10½ in. from the top of the floor racks to the underside of drain boards at the side walls. This gives a loading capacity of 2,263 cu. ft., or 196 cu. ft. more than the other car with end bunkers in place, and 59 cu. ft. less than this car with the end bunkers collapsed. The car has a light weight of 65,300 lb. and is equipped with A. A. R. standard trucks having spring snubbers and 5½-in. by 10-in. journals.



Burlington 40-ft. refrigerator equipped with overhead ice bunkers and underslung heater



Tracks recently relaid with new 131-lb. rail and surfaced on crushed rock ballast, on the main line between Weldon, N. C., and Emporia, Va.

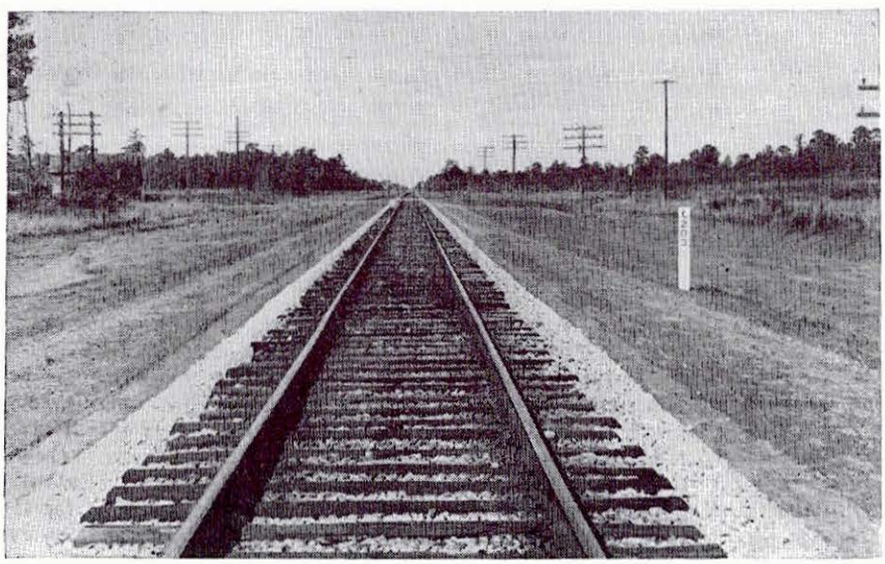
Atlantic Coast Line Will Soon Be Ready

Is pushing to completion large program of rehabilitation to enable it to meet post-war competition with speeds comparable to those on any road in the country

PROBABLY the largest roadbed and track rehabilitation program in the country is now being rushed to completion by the Atlantic Coast Line in preparation for a post-war era of high-speed competition. This program includes a large proportion of the tracks and other fixed facilities on the entire road and, when completed, its double-track main line between Richmond, Va., and Jacksonville, Fla., in particular, will truly be a "Speedway of the South."

The track rehabilitation work is a natural sequence to a mechanical improvement program carried out by the road during 1939-1944, inclusive, in which it spent a far larger proportion of its net operating income for equipment (mostly Diesel motive power) than any other large Class I road in the country. The next step, obviously, was rehabilitation of its roadbed, tracks and other related facilities to permit it to obtain the most effective use of this equipment.

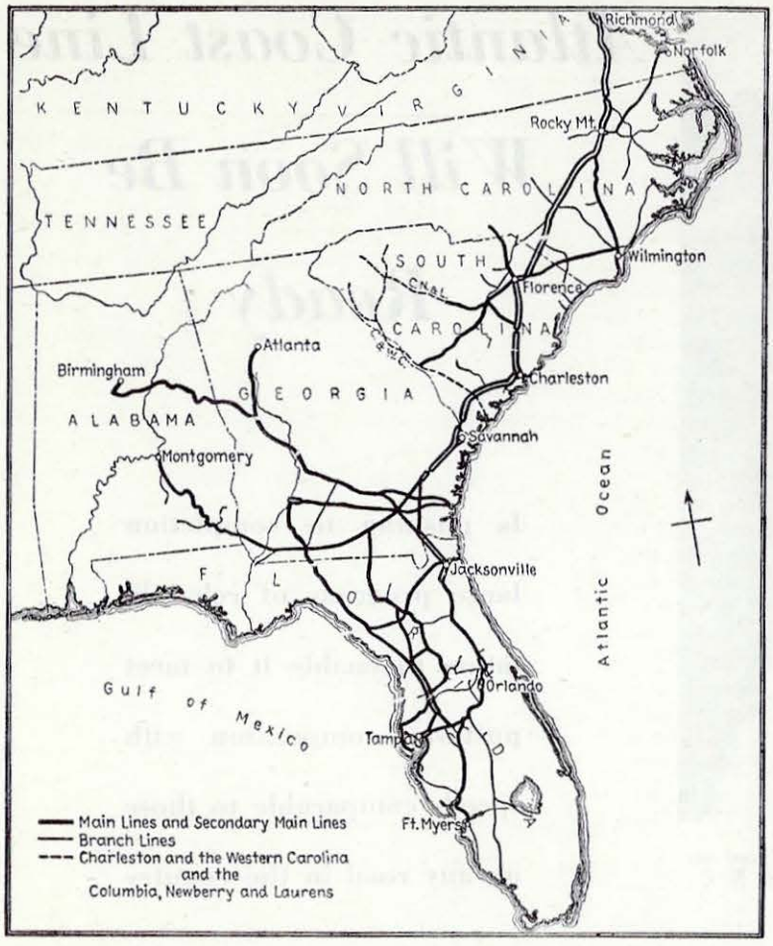
In 1945 the operating expenditures for maintenance of way and structures on this road amounted to more than $26,000,000, and approximately $4,750,000 was spent for additions and betterments, to bring the roadbed, tracks and many other fixed facilities up to modern standards. Features of this program, in addition to its size, are the modern standards of track construction adopted and the methods being employed to complete the work at an early date, despite serious shortages of materials and labor. The acquisition and use of a large amount of roadway work equipment is also an outstanding feature of the work.



Completed track and roadbed near Rose Hill, N. C., on the W. & W. between Wilmington and Rocky Mount. This track has been relaid with secondhand 100-lb. rail. Note also the complete right-of-way grading and new mile post

Large Track Program

The rehabilitation program was instituted in the latter part of 1943 and it is anticipated that it will be substantially completed by the end of 1947. By that time all principal main lines and secondary main lines will have been relaid with heavier rail, reballasted with crushed rock or washed and screened gravel, re-timbered with crosstie replacements, and the roadbed stabilized



A map of the Atlantic Coast Line System, including the Charleston & Western Carolina and the Columbia, Newberry & Laurens, showing main, secondary main and branch lines. The map also shows the Atlanta, Birmingham & Coast, which was made the Western division of the A. C. L. on January 1, 1946

by programs of bank-widening, ditching and right-of-way grading. Eventually, it is intended that branch lines will also be brought up to new high standards of maintenance by similar improvements.

Although the rehabilitation program was started in 1943, little actual work was completed that year, as extensive preliminary work was necessary. Much actual work was done in 1944, but the program did not get fully under way until 1945, when 326 track-miles of new 131-lb. rail were laid in main-line tracks, 213 track-miles of 100-lb. relay rail were laid in secondary main lines, and 43 miles of 85-lb. relay rail were laid on important branch lines. In the same year, 1,822,509 crossties were renewed; 652,986 cu. yd. of crushed rock and 60,633 cu. yd. of gravel ballast were applied; approximately 700 track-miles of main tracks and secondary main tracks were given an initial raise of 4 to 6 in. and a finish surface of 1½ to 2½ in. on rock ballast; and more than 100 miles of secondary lines were surfaced with washed and screened gravel ballast. Furthermore, a large amount of ditching, bank-widening and roadbed grading was completed in that year.

Large as this program appears from the foregoing statements, a still better idea of its scope is gained from the fact that the main-line portion of the program is at present only about 50 per cent complete, the work on secondary main lines about 30 per cent complete, and that on branch lines about 10 per cent complete. These figures do not include the new Western division (the Atlanta, Birmingham & Coast, which was merged with the Coast Line on January 1), which will receive similar rehabilitation.

The table showing the amounts of rail, ties and ballast used in 1943, 1944 and 1945, and the proposed program for 1946, provides a clear idea of the size of the overall project. Estimates for 1947 are not available, and some branch-line rehabilitation and signal work will probably still be in progress in 1948.

Although the present program is essentially one of roadbed and track rehabilitation, a large amount of work on bridges is also included. For some time the Coast Line has been strengthening important steel bridge spans to Cooper's E-60 rating, which is commensurate with wheel loadings on its lines. A program for timber trestle elimination has been under way for more than 20 years, and will be continued until all open-deck wood trestles have been replaced with concrete or creosoted ballasted-deck trestles. In addition, an extra steel-bridge gang and three additional paint gangs were authorized in 1945 to help catch up on deferred steel bridge repair and painting work.

Several carpenter and paint gangs were authorized in 1945 to rehabilitate station, office and roadway buildings. The road recently completed extensive rehabilitation of its wharfs and docks in the Savannah, Ga., and Norfolk, Va., areas; and the renovation of the exterior of its passenger station at Orlando, Fla., and of office buildings at Wilmington, N. C. At present, three new electrically-operated reinforced concrete coaling stations are under construction at Harrisburg, Fla., Savannah, Ga., and Wilmington, N. C., to replace obsolete timber coaling trestles. The coaling stations at the latter two points will be equipped with electrically-operated dragline attachments for stock piling and reclaiming coal. Similar coal stock-piling and reclaiming appurtenances will be installed at coaling stations at Waycross, Ga., and Tampa, Fla.

The Coast Line has 715.6 miles of three-position semaphore-type automatic block signals and 118.0 miles of searchlight signals. A program is being studied for modernization of these signals and of interlocking plants to the extent necessary. This program will include respacing automatic block signals between Richmond and Jacksonville, commensurate with the higher speeds to be put into effect when the present rehabilitation program is completed. Substitution of searchlight-type signals for the present semaphore signals, and the use

Rehabilitation Program

	Track-Miles of New Rail		Crossties Renewals (Maintenance Only)	Ballast Placed (Cu. Yd.)		
	131 Lb.	100 Lb.		Crushed Stone	Washed Gravel	Slag
1943	18.20	54.46	1,170,226	137,944	.....	25,825
1944	168.95	...	1,180,427	215,682	39,993	42,947
1945	326.67	...	1,822,509	652,986	60,633	.....
1946*	325.00	...	1,750,000	700,000	50,000	.....
Total	838.82	54.46	5,923,162	1,706,612	150,626	68,772

* Estimated.

of coded track circuits, is also being considered. The program also contemplates the installation of Union, Style T-21 hand-throw switch and lock stand with facing-point locks, including circuit controllers, on all facing-point switches within 200 ft. of highway grade crossings. Similarly, in non-automatic signal territory, Racor facing-point locks will be installed on all switches within 200 ft. of grade crossings.

Furthermore, studies are being made relative to the installation of C. T. C., with reverse running, to facilitate operation over certain bottleneck sections of double track, such as the territory between Folkston, Ga., and Jacksonville. Similar studies are being made for several short sections of single track at points where the main line crosses large rivers on long bridges and fills. Spring switches are being installed on the leaving ends of many passing tracks, and studies are being made concerning the installation of power-operated switches at the entering ends of such sidings.

Because it would be impossible to include within reasonable space in one article detailed reference to all phases of this program, the remainder of this article will be confined primarily to a description of the roadway and track improvements on the main line between Richmond and Jacksonville, with only brief reference to similar work on other lines.

The Main Line

Not many main lines in the eastern part of the United States offer more attractive possibilities for high-speed operation than that of Coast Line between Richmond and Jacksonville. This double-track line traverses the rolling coastal plains along the Atlantic seaboard and has few curves and comparatively light grades. Excluding the movements through terminals, the route traveled by its fast passenger trains is 93.4 per cent tangent. Of the remaining 6.6 per cent of main line, 4.38 per cent has curvature of one degree or less, 1.39 per cent has curvature between one and two degrees, 0.63 per cent has curvature between two and three degrees, and only the remaining 0.2 per cent of the mileage has curvatrue of more than three degrees. For these reasons, practically no curve reduction work is planned at this time, although a number of center passing tracks are being eliminated and are being replaced by new outside passing tracks to permit straight alinement for both main tracks.

The ruling grades between Richmond and Jacksonville are located in the vicinity of North Petersburg, Va., and Fayetteville, N. C. These are 0.6 per cent, but can be operated as momentum grades. Generally, the other grades do not exceed 0.4 per cent. Therefore, no grade reduction work is planned on the main line, with the exception of some vertical curves which will be lengthened to improve riding conditions at high speeds.

Both tracks of the main line between Richmond and Jacksonville, and all the single-track main line between Jacksonville and Tampa, will be relaid with new 131-lb. rail, releasing 100-lb. rail. In 1945, 326.67 track-miles of new 131-lb. rail were laid in the main line, bringing the total of new 131-lb. rail laid since 1943 to 513.82 track-miles. The program for 1946 calls for 325 additional track-miles to be relaid with new 131-lb. rail, and a similar amount will probably be laid in 1947. In addition, 256 miles of relay rail were laid in 1945 on secondary main lines and branch lines.

Much of the new rail is end-hardened at the mills, but when this is not done, it is end-hardened in track shortly after being laid. The new 131-lb. rail is joined by 36-in., 6-hole, 100-per cent, head-free joint bars with $\frac{1}{64}$-in. lateral center overfill, and R. M. C. plastic joint packing is being applied at all joints. The joints are bonded with rail-head-type bonds and the standard A. R. E. A. double-shoulder 14-in. by 7¾-in. emergency tie plate for 131-lb. rail is now being used.

In tangent track the rails and tie plates are being fastened to the ties by two gage spikes and two or more hold-down spikes per tie plate. On curved track and on bridges, full-spiking is generally used. All spikes are $\frac{9}{16}$-in. by 6-in. cut spikes. Ten anti-creepers are being applied per 39-ft. rail, eight against the current of traffic, and two to prevent movement in the opposite direction.

In connection with the main-line relay work, No. 10 turnouts with spring-rail frogs and 16½-ft. switch points are standard, except at the ends of double track, where No. 20 switches are being laid, which have 30-ft. switch points and rigid manganese-insert frogs. On the Jesup cut-off, which is used primarily for the fast passenger trains, and at the leaving ends of four new passing tracks on the main line, No. 16 spring switches with 22-ft. switch points were installed. All main-line switches have six adjustable rail braces and heavy insulated gage plates, the same as the standard for interlocked switches. This permits accurate control of gage and switch adjustments and will simplify future installations of interlocked power switches.

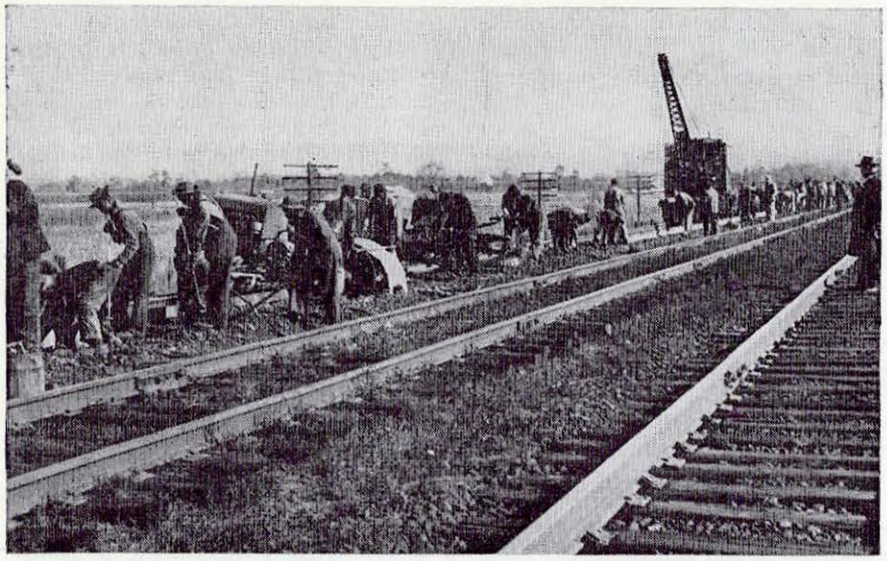
Passing tracks and other important sidings on the main line are being relayed with 100-lb. rail as the new rail is laid. For cropping the released 100-lb. rail for use in secondary main lines, a large rail yard and cropping plant is being set up at South Rocky Mount, N. C. This plant will have a friction saw, an electrically-operated gang drill and a straightening press. It is proposed to crop 18 in. from each end of all rail to be used for relaying secondary main lines, which will eliminate all secondary batter, as well as hidden defects in the vicinity of the old joint bars not detected by detector cars.

The Coast Line has, for a number of years, made liberal use of rail detector cars on its lines and this program will continue throughout the coming year to the maximum extent that the services of such cars will be available. By this means, relay rail to be used in secondary main lines will be tested in track before being sent to the cropping plant.

Rail Laying

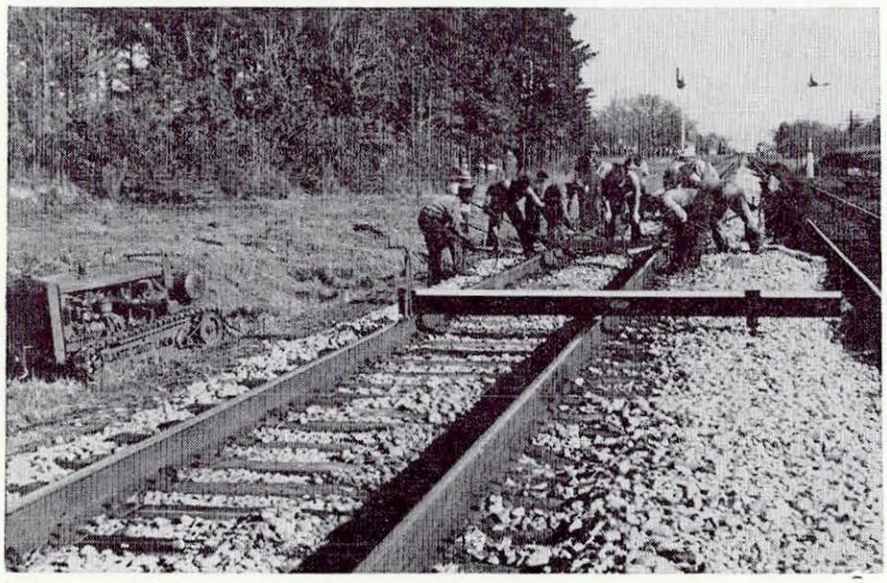
Every possible precaution is being taken to secure a good job of rail laying and to protect the new rail from possible injury. In the early stages of the rehabilitation program it was necessary to lay all the new rail as received. Accordingly, much of the 131-lb. rail was laid before tie renewals had been made. However, where tie renewals were heavy, an effort was always made to complete the renewals and to make the initial raise on new ballast before laying the new rail. Gradually, as the tie renewal work and initial surfacing caught up with and got ahead of the rail relay work, the programs were scheduled with the desired sequence of doing the work. In order, this consists of tie renewal work, including the removal of the old ballast where renewals are heavy or the old ballast is foul, followed by an initial raise of 5 to 6 in. on new crushed granite; then the rail laying, followed by the finish surfacing, regaging, application of anchor spikes, etc. All of this work is done under traffic, except the rail laying, for which the track involved is usually killed.

When relaying rail in track that has not had the necessary ties renewed and an initial surface on new rock ballast, the rail gang is preceded by a cribbing gang consisting of 30 laborers, one foreman and one assistant foreman. In track that has had the ties renewed and has been given an initial lift, this cribbing gang is not necessary and two men with a cribbing machine are added to the regular rail-laying gang, immediately ahead of the adzing machines. In addition, two work trains operate in connection with the rail-laying gang, one ahead of it and the other behind it. A gang with the head work-train unloads the rail and distributes all other material, exactly where needed. This gang includes a foreman, an assistant foreman, 30 laborers and a crane operator. The No. 2 work train gang, which picks up all released rail and other material, also consists of a foreman, an assistant foreman, 30 laborers and a crane operator.



Above—Head end of one of the main line rail-laying gangs. Note the tie-cribbing machine just ahead of the adzers. Below—Finish surfacing with electric power tamping machines, working between Enfield, N. C., and Whitakers, under contract with Atlantic Construction Company

An eight-tool tamping machine in operation making the second surface on track between Rocky Mount, N. C., and Weldon, near Battleboro



The loading operations usually keep within ½ to 1 mile behind the rail laying.

Most of the new rail is being laid by large, completely mechanized rail-laying gangs. The largest of these gangs is in charge of an assistant roadmaster and includes an extra-gang foreman, five assistant foremen and 101 laborers. In this total are 12 laborers and an assistant foreman, who follow directly behind the final rail laying operations, tamping ties at the locations of the old continuous joints, and any other swinging ties.

This rail laying organization laid approximately 175 track-miles of rail in 1945 and has laid as many as 416 39-ft. rails in one day. Its average production has been about 4 to 5 track-miles a week, including the renewal of 2 to 4 switches. The gang is completely mechanized and is fitted with the following equipment, which is lined up in the order shown:

1 dragline with 30-ft. boom, unloading rail
1 4-tool tamper with cribbing forks
2 push cars
2 bolt-tightening machines
2 spike-pulling machines
3 adzing machines
1 push car and power grinder
1 Burro crane
1 push car (oversize)
1 joint bar clamp
2 bolt-tightening machines
1 4-tool compressor on a push car
4 pneumatic spike-drivers
1 push car
1 4-tool compressor on a push car
4 pneumatic tampers
1 dragline with a 30-ft. boom, loading rail

While most of the new rail to date has been laid by company rail laying gangs, approximately 30 track-miles of 131-lb. rail, as well as some 100-lb. and 85-lb. relay rail, has been laid by completely-mechanized contractor's gangs.

Crosstie Renewals

In 1945 the Coast Line used 1,822,509 crossties for renewals in all tracks. Heavy renewals were required to protect and get full benefit from the investment in the new rail, and to offset the large amount of deferred maintenance that had accumulated during the depression years, and that had been accentuated by heavy war-time traffic. Furthermore, inability to purchase needed ties during the early war years because of labor and other conditions were contributing factors.

The Coast Line purchases ties and timber directly from producers. To obtain the necessary number of ties for its rehabilitation program, strenuous efforts were necessary. Most of the labor formerly engaged in cutting ties was cutting pulpwood, or had secured employ-

ment on defense projects. During 1945 railroad representatives, including traffic representatives, were sent out into all the tie-producing areas in the territory served by the railroad to interview the producers personally and urge their cooperation. The efforts of these men were effective, and the company-owned treating plant at Gainesville, Fla., which is leased to the American Lumber and Treating Company, was able to operate practically at capacity during 1945. Ties were also supplied to commercial plants at other points for treatment to augment the supply from the Gainesville plant. The American Lumber and Treating Company is just completing a new treating plant at Florence, S. C., which will have about the same capacity as the Gainesville plant, in order to supply the needs of the Coast Line for treated ties and lumber.

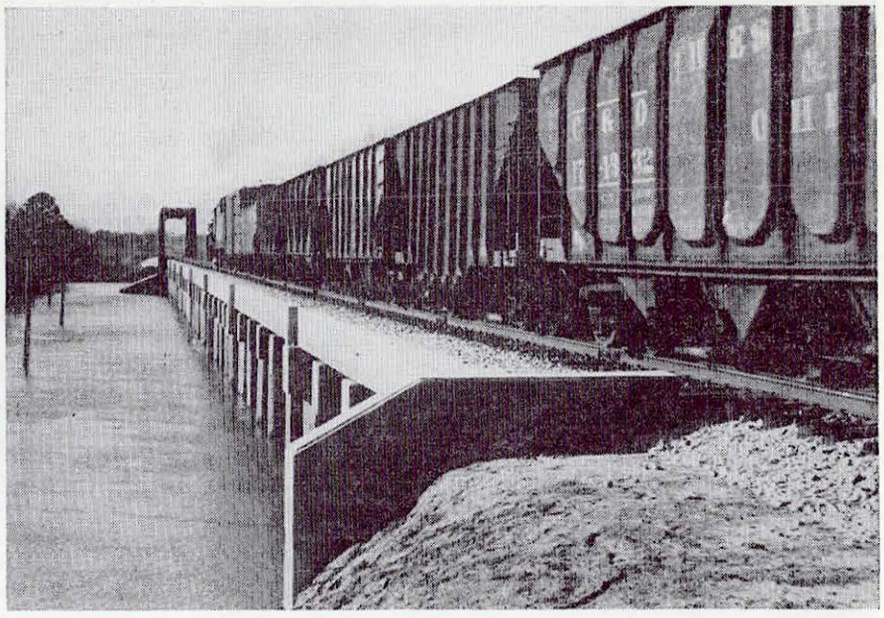
During the war, the Coast Line, like other roads, took all the crossties that could be procured, including many 8½-ft. ties, although 9-ft. ties have been standard on the road since 1940. Of the ties secured in 1945, about 80 per cent were pine, the remainder being oak and gum. All of these ties were air or steam-seasoned and were given a 100-per cent creosote preservative treatment by the Rueping process.

Renewals and Ballasting

Tie renewals, tie spacing, and the initial surface on new ballast are accomplished together under traffic. All ties are spaced 19½ in. apart, center to center, to provide 24 ties under each 39-ft. rail and a three-tie support for each joint.

The work varies somewhat, depending upon the condition of the old ballast. If the ballast is exceedingly foul, all the old ballast is removed and spread on the subgrade shoulders. If the ballast is not badly fouled, it is used with some additional new ballast to make the initial raise and new ballast is applied to fill the tie cribs. In this work, the old shoulder ballast is either plowed out in advance with a Jordan ditcher-spreader, or the ballast on the outside shoulders and in the inner-track space is cleaned in advance with Mole ballast cleaners. By these methods, good track drainage is assured for the new rail. Similar methods are used when reballasting track laid with relay rail on secondary main lines, and when surfacing with gravel ballast on branch lines, except that the height of the initial and final surfacing raises is not as great as on the main line.

The ballast used in all main tracks is a crushed granite, which is much harder than the limestone available in this region. It is crushed, screened and washed to meet A. R. E. A. specifications for crushed rock ballast, with a maximum size of 2½ in. This rock is secured from three commercial quarries, near Trego, Va., Lassiter, N. C., and Columbia, S. C. Because of the superior quality of this rock for ballast, it is being used for all main-line work, although the maximum haul (from Columbia to Tampa) will be about 600 miles. The average haul is much less. In main-line surfacing, an average of 40 cars, or about 1,750 cu. yd., of crushed rock is being used per track-mile.



The newly constructed concrete approach trestle of the Neuse river bridge south of Goldsboro, N. C.

For the tie renewals and spacing, and the initial and final surfacing, three 20-man gangs are employed. The first two gangs work together, using 12 to 16 jacks. The third gang works at least 1½ to 1¾ miles behind the initial surfacing gang, so that enough trains will run over the track to thoroughly settle it before the final running surface is made with power tampers. The first 20-man gang renews the ties and, if the tie renewals are heavy, throws out all the old ballast while the track is jacked up for the renewal work. For this work, a 25 to 35 m. p. h. slow order is used, depending upon the judgment of the roadmaster.

The new ballast is unloaded by a work train, and the second gang makes a 4-to-6-in. raise, nearly to grade, the track being tamped by hand the full length of each tie with ballast forks or spades.

The final raise of 2 to 2½ in. is tamped with power tampers. The gang doing this work is equipped with 2 four-tool electric tampers, with two-wheel portable power units that can be moved along the subgrade shoulder. Out-of-face tamping is employed in this work, leaving 12 in. at the center of each tie untamped. This gang used 10 jacks, which are spaced about one-third of a rail length apart. It also drops back and lines track at every opportunity, particularly when waiting for trains.

A final 20-man gang, with a foreman and an assistant foreman, is used for dressing and for correcting any minor track irregularities. This gang works about ½ to 1 mile behind the final surfacing gang. Six men in this gang, equipped with an electric 4-tool portable tamping outfit, correct any defects in surface. The other 14 men dress and line the track and do any other work needed. For this work, a ballast plow with dressing attachments is used. Both of the two latter gangs also check gage and drive hold-down spikes after any variations in gage have been corrected. Finally, all bolts on new or relay rail are re-tightened 30 to 60 days after the rail is laid and four times a year thereafter.

Roadbed Improvements

In connection with the other improvements, a large amount of bank widening and ditching is also being done. The Coast Line enjoys an advantage in traversing the coastal plain where the soil is a sandy loam, which packs well and drains readily. Consequently, the roadbed is very stable, and there are no water pockets or embankment slides of any material consequence on the entire line between Richmond and Jacksonville. In some instances this soil washes badly, but this difficultiy is met by the use of flat slopes and vegetation to prevent erosion.

Bank widening and ditching have been completed for some distance south of Richmond, and north of Jacksonville. The cuts have wide ditches and flat slopes, and the embankments are being widened with flat slopes. At the same

Embankment widened on the Jesup cut-off, before reballasting and rail renewal work

time all low places on the right-of-way are being filled, and other irregularities smoothed, so that power weed mowers can be used to mow the entire right-of-way. In many places complete right-of-way grading is being done, providing very flat slopes to ditches near the right-of-way lines to permit full use of power mowers and to improve drainage. About 20 miles of this work was completed in 1945 on the main line between Wilson, N. C., and Wilmington.

Some of the grading and ditching work has been done by contract with off-track equipment, and the railroad has also been using its own ditching equipment, which includes draglines, bulldozers, angledozers, American ditchers, and air-dump cars of 20 to 25-cu. yd. capacity. In addition to the equipment already on hand, the Coast Line plans to purchase the following grading and ditching equipment in 1946:

2 draglines
1 ditcher
2 air-dump cars
1 spreader
1 Diesel-powered 2½-cu. yd. crawler shovel
4 tractors with bulldozers
4 tractors with angledozers
1 ¾-yd. dragline
1 road patrol power grader

Work Equipment

Since the rehabilitation program was begun, the purchase of many kinds of maintenance of way work equipment has been authorized. Some of the largest items on the list of equipment purchased or authorized, in addition to the roadbed equipment noted above, follow:

74 4-tool electric tamping outfits
26 4-tool pneumatic tamping outfits
4 rail-laying cranes
1 50-ton locomotive crane
24 ballast cleaners
8 tractor-mowers
12 tie-adzing machines
16 pneumatic spike drivers
14 spike-puller machines
26 bolt tightening machines
40 grinder outfits
4 portable rail saws

It is of interest to note, in this connection, that several of the contractors have developed new track machines to aid them in their work. Outstanding among these are a number of machines developed by the Royce Kershaw Company, Montgomery, Ala., and the C. G. Kershaw Company, Birmingham, Ala., which include a cribbing machine for rail-laying work, a pneumatic tie-nipper with a compressor and spike drivers for tie renewal work, a combination ballast plow and track dressing machine, and a rail-laying machine.

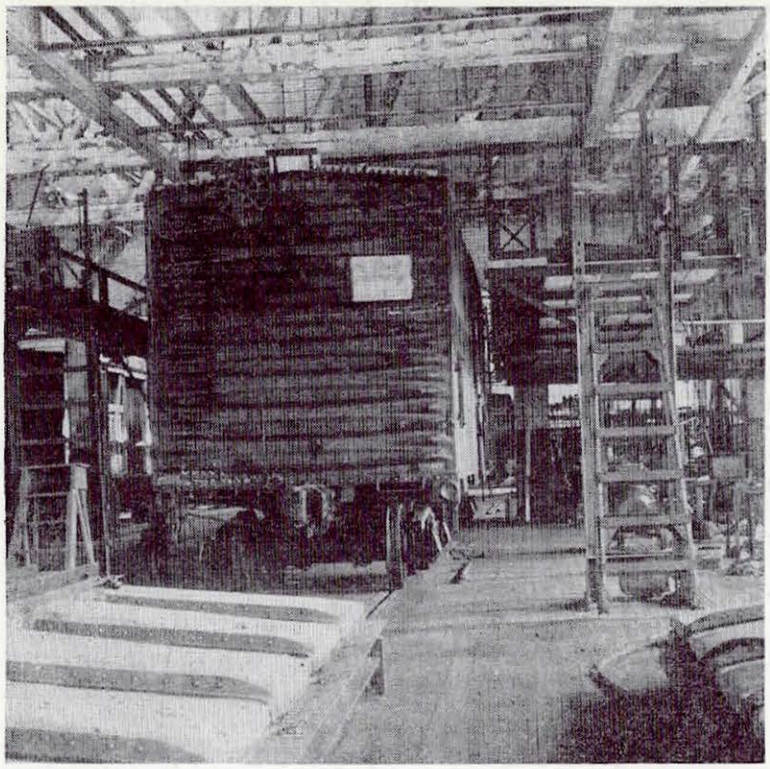
Securing Labor

In addition to the difficulty in securing materials, it has also been difficult to secure proper labor for the program. The method used to secure ties has been described, and similar aggressive methods have been employed to secure other materials; likewise, securing labor necessitated considerable forethought and aggressive methods. Most of the labor has been of indifferent quality, and unrelenting efforts were necessary to keep the gangs up to strength. In this connection the services of the Railroad Retirement Board, the U. S. Employment Service, and other agencies were used. To house track laborers not employed locally, the railroad constructed some 400 new steel-underframe camp cars during the last two years, a portion of these replacing obsolete and worn-out equipment.

The number of men working on the rehabilitation work during 1945 ranged from 1,600 to 1,800. This number does not include the regular section forces, which were also augmented where possible, and used in many cases to help prepare for and complete much of the rehabilitation.

With the class of labor available, the problem of supervision was extremely important in order to obtain the high quality of work desired. To solve this problem, a large number of track foremen, experienced in the use of work equipment, were obtained from other sections of the country, and a reassignment of roadmasters and other supervisory officers was made to provide proper supervision of the whole program.

All of the work described has been planned and prosecuted under the active direction of C. McD. Davis, president of the Atlantic Coast Line.



Will It Be New or Rebuilt Freight Cars?

A discussion of the conditions now prevailing and the factors affecting the solution of the answer to this question

By P. P. BARTHELEMY*

IN THE general freight-car situation the railroads are facing a problem the magnitude of which is not realized by the public. The number of new cars built during the past four years has been comparatively small. There has been done only a limited amount of heavy repair work; a vast number of cars that would have been retired under normal conditions were continued in service to help alleviate the shortage of cars. Running repair work was confined mostly to items that were absolutely necessary to keep cars in some kind of service. The extraordinarily high average mileage made was also a big factor in the drop in general service condition as, after all, the wear-and-tear on a car is almost in a direct ratio to its mileage use.

Even the so-called periodic work of air-brake cleaning and repacking journal boxes has suffered in that the average time interval between periodic attention has been much increased; the quality of the work has also suffered, due to the use of less experienced help and of inferior war-time materials. Draft gears and attachments have suffered more from neglect than any other major part of the car, and failures in service of those parts have been responsible for a highly increased number of train delays and train accidents. Certainly an intensive draft-gear renewal program with proper repair attention to draft members, couplers, and yokes is one of the most important items in a rehabilitation program.

The general scrambling of car ownerships led to undesirable distributions on a commodity basis, particularly on the western roads where commodity requirements are less general and more exacting than in the industrialized areas. A great many of their high-commodity box cars were away from home rails for periods of a year and more.

New Box Cars Badly Needed

New box cars in particular are badly needed, not only to provide for present and immediate future deficiencies, but also to provide first-class cars suitable for high-grade commodities. Cars that were in first-class condition a few years ago have deteriorated badly through intensive use and lack of commodity maintenance work, so that commodity-speaking they now rate only as second-class. A large number of second-class cars that would ordinarily have been programmed have dropped back to third-class. Then there is a very large number of third-class that have likewise fallen in service value; many of them are now only fit for scrapping. A large portion of these are not equipped with AB brakes and the cost of making this improvement in addition to the expense of making intensive repairs will be a factor in marginal cases in deciding economical disposition of such cars.

The fourth category includes cars that would normally have been retired but which were pressed into continued service. The sooner these are gathered in and scrapped the better; as a class they constitute a menace to safe train operation.

Service requirements differ widely in different sections of the country. Take box cars as an example. In the highly industrialized areas there is a demand for all classes from new down the commodity scale to rough box. This makes it practical to let the condition slide down the scale until the car is no longer fit for rough service and goes to the scrap heap, new cars being constantly added to keep the cycle going. By this means the uneconomical life extension of older and in a modern sense heavily obsolete construction is avoided. It's a fine plan if you can work it!

Conditions in the agricultural and forest-products sections, however, are vastly different. Flour, sugar, newsprint, for example, require cars of the highest order, with dressed lumber a very close second. Cars for all these commodities must be snow-, rain-, and cinder-proof; floors and walls must be smooth and in first-class condition.

The next classification is bulk grain. For this commodity cars must be grain-tight, sound, and practically free from moisture and cinder infiltration. There is little demand for rough box—those below grain condition. Fortunately, on the other hand, the roads serving these areas are in the long haul class, and under normal conditions keep a large number of their ownership cars on the home road, or cars loaded for off-line points are not permitted to dally too long away from home. This permits a high degree of selectivity in keeping cars in their

* Mr. Barthelemy is retired master car builder of the Great Northern.

various commodity uses and in maintaining them in good condition. For example, boxes for grain may be conditioned in advance of the heavy grain season, and it is reasonable to expect a number of grain trips from each car.

Contrast this with what these roads have been up against in the past few years: their good cars scrambled all over the country and in their place a hodge-podge of every known ownership. Too many of these were in the so-called merchandise class, fit for package freight but having cracks in floors and sides, bad ends, etc. Considerable work was necessary to make such a car fit for grain; then they were usually one-trippers, and the extra grain work done was probably of little or no value to the owner, and on top of all this an acute labor shortage and peak crops! It reached a point where shippers would load almost any car, and in spite of all efforts to restrain them, entirely unfit cars were loaded. This time, however, has passed: shippers are becoming critical and again demand cars which they consider fit for their commodities.

Maintaining Cars

These western roads are faced with the problem of maintaining their cars in suitable condition. When high-commodity cars drop to second-class, it is necessary to recondition most of them, a considerable expenditure. Grain cars must be kept up for that commodity. This leads to an undesirable continuation of the older and heavier equipment and retards the wider purchase of new cars. Some modernization can and should be carried out in connection with general repair programs. However, so many of these older grain cars have been off line in other service, and their present condition, requiring a considerable expense to return them to grain service, combined with the expense of equipping them with AB brakes, is going to make it economical to retire them and make room at the top for more new and modern cars. These points deserve a very careful weighing in determining which car shall and which shall not receive these heavy repair expenditures.

Flat cars, gondolas, and hopper cars have suffered from neglect and intensive use. Flat-car floors on many cars need complete renewal, as do wood floors and wood sides in gondolas. Many steel gondolas and hopper cars need extensive repair work. These classes are more localized than box cars. However, the same general arguments in considering retirement mentioned in connection with box cars apply here also, as do those in connection with the repair work. There will, no doubt, be a very extensive retirement program here also.

Refrigerator-car owners are also faced with both rehabilitation and retirement plans. Quite a number of the older cars have become uneconomical to maintain to the necessary high-condition standard required of such cars. Important parts are badly corroded or decayed, their construction is not substantial enough, insulation is inadequate and tare weights excessive. Such cars should be carefully surveyed and the poor ones culled out, to be replaced by modern new cars.

All in all, it's a sizable job, one that is going to keep repair facilities occupied for some time. A vast amount of materials, including steel, lumber, specialties, and certainly a lot of paint materials, will be required.

* * *

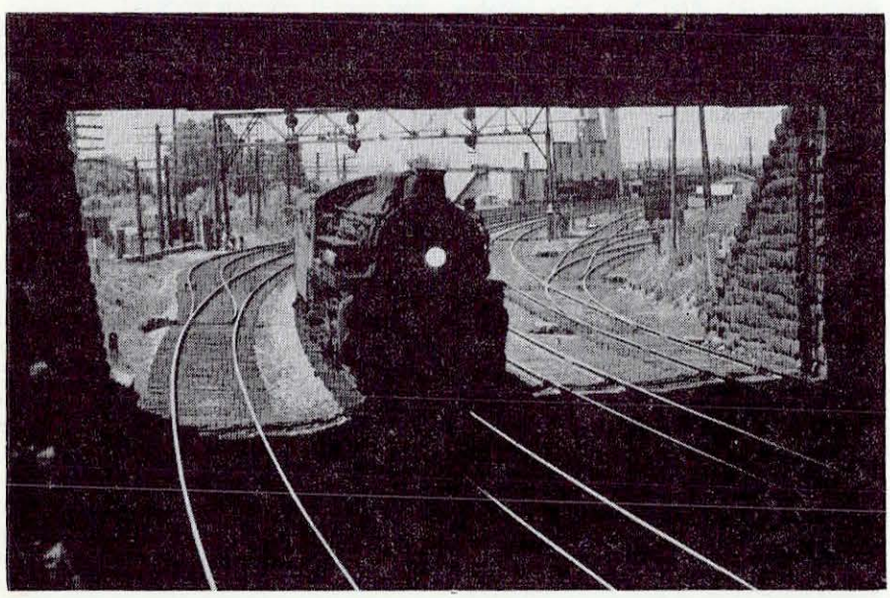


Photo by Wayne Brumbaugh

West Shore (N. Y. C.) passenger train about to enter Palisade Tunnel at North Bergen, N. J.

Train Communication

(Continued from page 458)

of some of this equipment and the relatively long periods of non-mobility, make this problem a difficult one.

It appears that the cost of these radio sets at the present time and probably for some time in the future will be about $1,000 per unit installed. This does not include the cost of changes or additions which must be made in the power supply of the unit of rolling stock on which the apparatus is to be installed.

All previous references herein to a manufacturer has been confined to Bendix since that is the type of apparatus with which we have been working. The Westinghouse Electric Corporation, the General Electric Company through the General Railway Signal Company, the Farnsworth Radio Corpooration, the Television Company, the Aireon Corporation, Galvin Manufacturing Corporation, and McGuire Industries, are all conducting tests on different railroads and they all will be in a position soon, if they are not at present, to provide satisfactory radio apparatus for railroad use.

Possibilities of Radar

Great interest, especially on the part of the lay people, seems to exist in an automatic warning device which might be utilized to avoid collisions. The publicity which has been given to radar and the part that it played in winning the war has enhanced this interest and made many people ask why radar cannot be used on trains. So far as I know, no serious investigation has been made by anyone but there are certain facts having to do with the propagation of radio waves which would seem to indicate that success is doubtful. Radio waves are propagated in straight lines and are reflected in straight lines. This principle of reflection is the one on which radar is based. The right-of-way on at least a part of most railroads is extremely crooked and there is no way, so far as I know, to bend these radio beams around curves. There is also the question of large fixed structures adjacent to railroads which would act as reflectors if there was the slightest curvature. There is also the question of reflection from trains on the opposite track in the case of double-track or multiple-track operation. All of these factors seem to indicate that use of a radar warning device involves difficulties which probably will not be overcome. A prediction that this or any other problem cannot be solved would, of course, be foolhardy, but at present it is not solved, and an early solution does not appear probable.

GENERAL NEWS

Initial Hearings in Op Wage Arbitration

Compared with other industry, unions say their pay is too low

Proceedings before two boards of arbitration to consider the wage demands of 18 railway labor unions began in Chicago on February 18, and upon request of the unions, were immediately recessed until February 22, as reported in the *Railway Age* of February 23. Proceedings before the arbitration board which is to decide the case of the operating unions (Brotherhood of Locomotive Firemen and Enginemen, Order of Railway Conductors and Switchmen's Union of North America) are abstracted herein, while those of the board which is sitting in the case of 15 co-operating non-operating unions is reported elsewhere in these pages.

The hearings on February 22 were confined to opening statements by the disputants. In his initial remarks, Harold C. Heiss, counsel for the organizations, stated that the employees for whom he spoke should be granted a wage increase of $2.50 per day for four primary reasons:

"First, that railroad wages have fallen grievously behind the rising cost of living, and that the increase of $2.50 will not actually compensate the employees for the increase in living costs that have taken place during war-time.

"Second, that an increase in wage rate is essential to provide for a higher standard of living and for the ability to absorb the products of the increased productive capacity of the nation.

"Third, that the increased output of transportation service, or stated in another way, the increased productivity of transportation employees, justifies the wage increase in the amount requested.

"Fourth, that the wage rate of the transportation employees failed to keep pace with the rising wage rates in other industries prior to and during war-time, and that the requested increase is essential to permit those employees, particularly, to catch up with other employees and to prevent these railway employees from falling even further behind the current general upward trend in wage rates."

Mr. Heiss also mentioned as secondary considerations such factors as the "hazards of employment, the training and skill required of these men, and the degree of responsibility which they must of necessity exercise." In his argument, he contended that since January, 1941, the average straight-time hourly earnings of transportation employees had risen 15 per cent, while those in manufacturing had risen more than twice that much.

Elmer A. Smith, senior general attorney, Illinois Central, Chicago, in his opening statement on behalf of the carriers, said that the total increase in wages sought by railway employees, based on the 1941 volume of employment, would amount to $920 million, or $1,250 million based on 1944 employment. It is inconceivable, he asserted, that the carriers could secure increases in rates sufficient to cover such an enormous increase in the railroad wage bill and that, due to the fact that, unlike manufacturing industries, 60 per cent of railroad costs are represented by labor, it would be impossible to offset the increase of costs by economies or adjustment in the volume of employment.

Mr. Smith also pointed out that, unlike other industries, the railroad price level as reflected in railroad rates today is at approximately the same level as that prevailing in 1939, and that increases can be had only after prolonged hearings before the Interstate Commerce Commission, during which time the carriers would suffer irreparable damage. A further difference between railroad and manufacturing industries, such as the automobile industry, was stated to be a fact that the peak demand for railroad transportation ended with the ending of the war, whereas industries that manufacture automobiles and other consumer's durable goods could look forward to a considerable period of great prosperity due to heavy public demands for their products. He also stated that the competitive position of the carriers and other transportation agencies precluded any considerable relief by means of rate increases.

Concerning the contention of the unions that average earnings in the railroad industry have failed to keep pace with those in other industries, Mr. Smith said that the average annual earnings for full-time employees in private industry in 1944 amounted to $2,100 as compared with $3,564, or 63 per cent more, for these railroad employees. Furthermore, he said that since 1929 the increase in average annual earnings of all employees in private industry amounted to $781, while for the operating group of railroad employees the increase totaled $1,072. On a weekly basis in 1944 the average worker covered by state unemployment compensation laws earned $44 per week as compared with $45 earned by the non-operating railroad employees and $68 earned weekly by the operating employees.

The hearings for February 23 opened with the completion of Mr. Smith's testimony, following which H. W. Fraser, president Order of Railway Conductors, appeared as a witness for the organizations. In his testimony Mr. Fraser stated that "so far as the railroad industry is concerned, voluntary arbitration is being subjected to a crucial test on a national basis, with both parties agreeing to accept the final award as binding upon them. Voluntary arbitration is a desirable instrument; it can be

(*Continued on page 474*)

Say Ops' Pay Is Up More Than Non-Ops'

Faricy says raise of 3½ cents would equate wages to living cost increase

Arbitration proceedings in the dispute between the 15 co-operating, non-operating railway labor unions and the carriers, in which the unions have asked wage increases of 30 cents an hour, began at Chicago on February 18, and, as reported in the *Railway Age* of February 23, were immediately recessed until February 22 at the request of the labor organizations.

Opening statements were made at the hearing on February 22 by Lester P. Schoene, general counsel for the organizations, and by William T. Faricy, attorney for the carriers. In his statement of the case of the employees, Mr. Schiebe justified the proposed increase in wages on the grounds, first, that wages for the non-operating employees have failed to keep pace generally with the upward movement of wages in the country, both during the war period and during the period of post-war wage increases. This, according to Mr. Schoene, is the primary reason for granting the pay increases.

As secondary principles which should be considered he stated that the hazard of employment had increased considerably during recent years; that the wages of employees represented by him have failed to keep pace with the increased cost of living; that the resulting wage did not provide a fair or decent standard of living; that the carriers were now in a favorable financial condition to make increased wage payments; that increased productivity of railroad workers entitled them to increased compensation; that wages in the country must be maintained at a level sufficient to provide a market for the products of industry and agriculture; that railway employees are faced with a considerable loss in pay due to reduction of hours of work and down-grading as the result of the close of the war; and, finally, that "the material progress of this country provides a progressively higher standard of living which is and must be reflected in progressively higher hourly wage rates."

In presenting arguments to support his main thesis, Mr. Schoene contended that in 1921 the average hourly earnings of the non-operating railways employees were 6.6 cents above the average for 25 manufacturing industries that are reported by the National Industrial Conference Board, whereas in September, 1945, the average hourly earnings of these railway employees were 2.14 cents below the average for those manufacturing industries.

In his opening statement Mr. Faricy said

that since 1939 the railroad industry had absorbed wage increases amounting to approximately one billion dollars without these increases having been reflected in the freight-rate structure, pointing out that, with the single exception of the electrical utilities, no other industry in America had been able to absorb such a volume of increasing costs without reflection in its price structure. In explaining why it was possible for the railroad industry to pay such a tremendous increase in wage rates while at the same time maintaining its own rates at the 1939 level, he said that the heavy volume of traffic during the war years was the only answer.

Further pointing out that during the latter years of the war, in spite of an increasing volume of traffic, there was a decline in the net income, Mr. Faricy stated that the end of the war could be expected to bring with it a declining volume of traffic owing to the cessation of troop movements and the discontinuance of transportation of large volumes of other traffic normally handled by water and motor vehicles.

Continuing, Mr. Faricy said that a freight rate increase at an early date is imperative without any further wage increase. Estimating future traffic, he stated that the Bureau of Statistics of the Interstate Commerce Commission expects railroad traffic volume to drop to a level near that of 1941 and that the railroad industry's own estimate is for a traffic volume somewhere between that of 1941 and 1942.

Based on 1941 results, application of the present cost of wages, materials, supplies and taxes, would produce a $250,000,000 deficit instead of the $500,000,000 net income that the railroads actually earned in 1941. Mr. Faricy asserted that to have a healthy railroad industry, net railway operating income should be approximately a billion dollars a year.

In direct answer to the unions' contentions, Mr. Faricy stated that railroad men get good wages and have good working conditions at present and that, in addition, they have other advantages not possessed by employees of any other industry. Further, he stated, they stand to lose less by reduction of take-home pay than do the workers in manufacturing industries and it would take less of a raise to put them on a parity with those who have had recent increases. On the basis of annual earnings railroad employees receive approximately 25 per cent more compensation than those employed in other industries, according to figures published by the Department of Commerce, he said.

In the event that it is decided to keep railroad employees even with the increase in the cost of living permitted by the national stabilization program, a wage increase of only 3½ cents per hour costing the railroad industry $105,000,000 a year on the basis of the 1941 volume of employment, is the greatest that could be justified. An increase of 10 cents an hour, according to Mr. Faricy, which would cost the railroads from $300,000,000 to $400,000,000 a year, depending upon the volume of employment, would completely restore any prospective drop in take-home pay.

At the hearing on February 23, W. M. Homer, economist for the Labor Bureau of the Middle West, appeared as a witness for the unions and presented various exhibits designed to show the distribution of railway employees on the various classes of railroads. He was followed by George Cuccich, a statistician in the Railways Employees' Department of the American Federation of Labor, also a witness for the unions, who presented numerous exhibits outlining the duty of the various classes of non-operating employees.

In addition Mr. Cuccich presented a number of exhibits which traced the history of the railroad wage movement from the time of the Director General in World War I to date. As a part of his testimony Mr. Cuccich said, "This exhibit shows the straight-time average hourly earnings of the operating and non-operating employees for the years 1920, 1929 and 1944, the disparity between the average hourly earnings of these groups for each of these years, and the change which occurred in the average hourly earnings of each group between 1920 and 1929, 1929 and 1944 and 1920 and 1944.

"It will be noted that while the average straight-time hourly earnings of the operating employees increased 2.7 cents from 1920 to 1929, the straight-time average hourly earnings of the non-operating employees declined 5.6 cents during the same period, thus widening the disparity between these two groups of employees from 19.4 cents in 1920 to 27.7 cents in 1929, or 8.3 cents per hour.

"Between 1929 and 1944, the increase in the straight-time average hourly earnings of both groups was about the same, 25.7 cents for the operating employees and 26.5 cents for the non-operating employees, which is a difference of only 0.8 cents per hour. The slightly larger increase shown for the non-operating employees was brought about by the establishment of a minimum rate in the railroad industry and the granting of a slightly larger increase to the lower-paid employees in 1943, as has been indicated. Consequently, the disparities which were created prior to 1929 are still largely present in the railroad wage structure for, by comparing the years 1920 and 1944, it will be noted that the straight-time average hourly earnings of the operating employees increased 28.4 cents as compared with an increase of only 20.9 cents for the non-operating employees indicating a disparity of 7.5 cents per hour between the two groups of employees."

In cross-examination Mr. Cuccich said that, although the exhibits prepared in the 1941 and 1943 wage cases would reveal the disparity outlined above, this point was not pressed in either of these hearings and that the respective emergency boards took no notice thereof.

Glen B. Gobel, vice-president of the Brotherhood of Railway Clerks, was the first witness to appear for the organizations at the hearing on February 25. Mr. Gobel presented, first, a series of exhibits and testimony defining the scope of the employees represented by his organization and outlining the nature of their work and stressing its importance to the successful operation of the railroad industry.

Following this he introduced various exhibits, explained by his testimony, designed to show how the clerks had suffered as a result of increases in the cost of living, and others purporting to show increasing hazards to clerical and station employees. Much of Mr. Gobel's testimony concerned the effect of taxes on the usable portion of a clerk's wages, this being cited as one of the reasons the employees' incomes had failed to keep pace with rising living costs.

The session concluded with a portion of the testimony of T. L. Jones, vice-president of the Brotherhood of Maintenance of Way Employees, also appearing as a witness for the unions. Mr. Jones' testimony was primarily devoted to outlining the responsibilities and degree of skill required of maintenance employees.

What "Smalls" Are

In the February 16 issue of *Railway Age*, in a report on the Great Western (England) "zone to zone" traffic handling system, the term "smalls" was incorrectly construed as meaning parcels or express traffic. "Smalls" is the British equivalent of less-than-carload freight and the G. W. R.'s experiment is an attempt to simplify handling of l. c. l., rather than parcels and express as reported.

"Kentuckian" Schedule Cut

The Pennsylvania has announced a faster schedule for its "Kentuckian," an overnight train between Louisville, Ky., and Chicago. Departure from Chicago is now at 11:05 p. m., 20 minutes earlier than heretofore, and arrival at Louisville is scheduled for 6:10 a. m., one hour and 30 minutes earlier than formerly. Previous stops at Logansport, Ind., Crown Point, Edinburg, Columbus and Scottsburg have been eliminated.

Radio Highlights RRs' Future

Developing the theme that there is a "future" for the railroads, Charles H. Buford, retiring vice-president operations and maintenance of the Association of American Railroads, and W. C. Kendall, chairman of the A. A. R. Car Service Division, participated February 24 in a "National Hour" program on National Broadcasting Company radio stations, with the former discussing passenger train developments and the latter the prospects for better freight service.

Honor Memory of George Westinghouse

Charging that "co-operation between employers and employees and between business men and the public has been systematically undermined by government and by labor-union propaganda," Frank D. Newbury of Pittsburgh, vice-president of Westinghouse Electric Corporation, addressing the American Society of Mechanical Engineers, urged recognition of individual initiative, co-operation of employer and worker, and business leadership as three essentials of a sound national economy. Mr. Newbury spoke at a George Westinghouse centennial dinner, sponsored by the American Society of Mechanical Engineers, of which George Westinghouse was president.

Gwilyn A. Price, president of Westinghouse Electric, announced the company's plans for a forum of leading scientists, engineers and industrialists, which will be held at Pittsburgh on May 16 to 18.

Albert N. Williams, vice-chairman of the board of Westinghouse Air Brake Com-

pany, discussed "Westinghouse's Position in the History of Transportation" and Dean Samuel W. Dudley of the Yale School of Engineering, spoke on "Westinghouse—the Man." D. Robert Yarnall, president of the A. S. M. E., presided over the meeting, and ex-president Dean Dexter S. Kimball was toastmaster.

Trainmen Threaten Walkout on Texas & New Orleans

The Brotherhood of Railroad Trainmen has announced that its 3,500 members who are employed by the Texas & New Orleans (Southern Pacific Lines in Texas and Louisiana) will strike, beginning March 2, because of alleged failure to settle grievances dating back many years. According to a spokesman for the railroad, A. T. Mercier, president of the Southern Pacific, has appealed to President Truman for the appointment of a presidential emergency board, which if done, will have the effect of postponing the strike for at least thirty days.

Shot-Blast Cleaning Plant on Canadian Pacific

Construction of a $300,000 shot-blast cleaning plant, the first of its type on a Canadian railway, is under way at the Canadian Pacific's Angus shops in Montreal. The plant will be completely enclosed for year around operation, and will be equipped with both air cleaning and ventilating systems, and shot conveyors and cleaners. Before entering the shot-blasting room cars and locomotives will be steam cleaned, stripped of equipment, and dried. After approximately three hours in the blasting room equipment will be given a coat of priming paint before going to the repair shops.

Vaughan and Cunningham Honored by College

Robert C. Vaughan, chairman and president of the Canadian National, and William J. Cunningham, professor of transportation at the Harvard Graduate School of Business Administration, received honorary doctor of science degrees from Dr. John A. Ross, president of Clarkson College at Potsdam, N. Y., on February 24. In his commencement address to the college, Professor Cunningham declared that for the United States to follow the British tendency toward socialization of the railroads would be a mistake of great magnitude. He supported this contention with a comparison of the railroads' record under The United States Railroad Administration, of which he was a member, during the first world war with their record as private enterprises during World War II.

Atlantic Coast Line Makes Safety Awards

Safety certificates, signed by C. McD. Davis, president, were awarded February 20 to departmental heads of the Atlantic Coast Line.

First presented in 1934, the safety certificates are awarded annually to departments having lowest casualty rate per million man-hours worked. The competition is between Northern (Richmond to Savannah) and Southern (Savannah south) division departments which perform identical services. This year the Western division, formerly the Atlanta, Birmingham & Coast Railroad, has entered the field as a third competitor.

British Truckers Protest Socialization

Two British trucking organizations, the Road Haulage Association and the British Road Federation, have issued a statement protesting the government's proposal to socialize their industry along with the railways. In their statement, an abstract of which appears in the British weekly "Modern Transport" for January 26, the "hauliers" charge that the government has refused a public inquiry into the pros and cons of nationalization of the trucking industry without giving any reason for the refusal. They maintain that the industry is not a monopoly, and that socialization would result in the liquidation of a great number of small independent family businesses, putting many men out of work.

To the government's claim that trucking was efficiently operated under the government-controlled war-time pool, the truckers reply that it was efficient only in that it conserved gasoline and tires by limiting truck traffic to that which could not possibly he diverted to the railroads. In peacetime, they maintain, this system could not possibly replace the efficiency, speedy movement, detailed control, and flexibility of the "haulier"-owned organization; and that a "take it or leave it" attitude is bound to come with a state monopoly which lacks all competitive inducement to provide convenient low-cost service.

The truckers emphasize the necessity of providing real competition in transportation costs among the various forms; that is, the costs must be evident, and not a camouflaged rate structure which is ultimately subsidized by the taxpayer. It is further claimed that unless the nation can have speedy efficient competitive transport, rather than rule of thumb regimentation, Britain's re-establishment of overseas markets will be seriously handicapped.

South African Railways' Net Declines

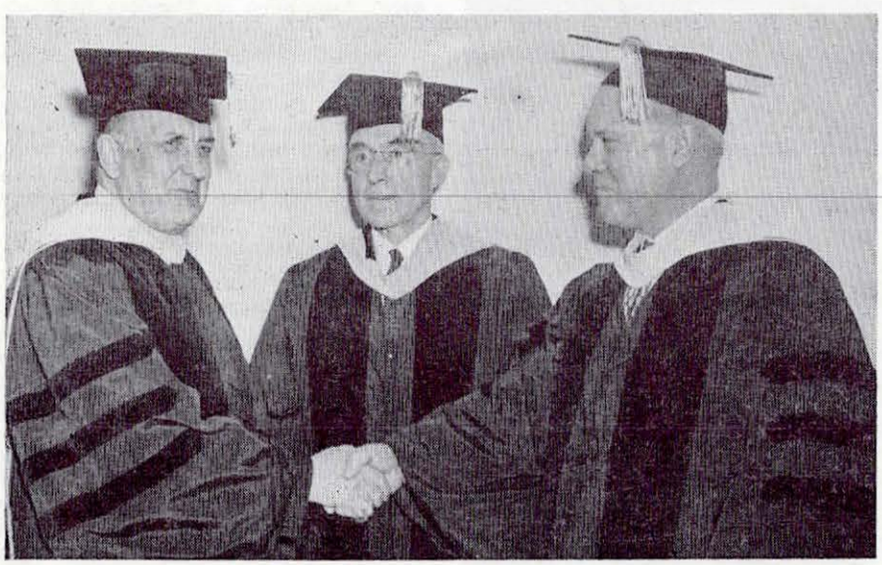
During the year ended March 31, 1945, the South African Railways earned gross revenue of £48,769,091. Total operating expenses before interest charges were £36,590,-111, giving an operating surplus of £12,178,-980. This surplus was further reduced by interest and miscellaneous charges to a net of £1,032,490. Net income has shown a steady decrease from the 1942 figure of £6,796,236, while gross revenue has continued to increase from the £40,260,785 earned in 1942. The operating ratio for the year ended March 31, 1945, was 75.03 per cent. Revenue freight ton-mileage (short tons) for 1945 was 8,664,670,201; a higher figure than that of any of the previous three years, and an increase of 706,149,500 over 1944. The railways carried 218,823,055 passengers in the year, also the highest figure for the 1942-1945 period. Sixty-four per cent of the South African Railways' gross revenue was obtained from freight traffic, and 28 per cent from passengers.

A. C. L. Wins Tax Case Against Kentucky Commonwealth

An effort of the Kentucky commonwealth to collect $2,358,332 in income tax from the Atlantic Coast Line through income earned by the Louisville & Nashville was defeated recently when the claim was turned down by the Court of Appeals at Frankfort, Ky. The state had demanded a share in $28,641,600 of dividends paid by the L. & N., which operates in Kentucky, to the A. C. L.

The A. C. L. is chartered in Virginia and has its principal office in Wilmington, N. C., and Kentucky's highest court declared that, even assuming it operated in Kentucky, there was no basis for it having to pay income tax on earnings from its investments in Kentucky.

The opinion, written by Judge Osso W. Stanley, a commissioner of the court, explained that a complete survey failed to disclose any other case exactly the same. He added that the court's purpose was to determine the intention of the Kentucky



Dr. Vaughan, Dr. Ross, and Dr. Cunningham

general assembly in the wording of the state's income tax statutes.

The construction to be applied to the legislature's intention, he continued, is one that would produce "uniformity and equality and result in just and equitable treatment, economic stability, practical administration, and give recognition to the principles of reciprocty between the states."

Therefore, Judge Stanley said, the court holds that Kentucky's income tax statutes do not "include the receipt of dividends by a foreign corporation (one chartered in another state) on the stock of a domestic corporation (one chartered in this state) where the stock is held solely as an investment or otherwise, and has no fair relationship to business done by the foreign corporation or its property located in the state."

The record showed the A. C. L. owns 51 per cent of the stock of the L. & N. The income tax demanded totals $1,145,664 and penalties and interest, $1,212,668.

Club Meetings

The New York chapter of the Army Transportation Association will meet March 7, 12:15 p. m., at the Hotel Astor Grand Ballroom to honor Maj. Gen. Edmond H. Leavey, Chief of Transportation, U. S. Army, and Col. Edmund C. R. Lasher, zone transportation officer, Second Zone. Col. J. Monroe Johnson, Director, O. D. T., will be the guest speaker.

The Northwest Car Men's Association will meet March 4, 8 p. m., at the Midway Club, St. Paul. A paper, "Loading Rules," is to be presented by L. T. Donovan, loading inspector, Mechanical Division, A. A. R., Pittsburgh.

The Transportation Club, Rochester (N. Y.) Chamber of Commerce, will have an opportunity to hear Matthew Woll, vice-president, American Federation of Labor, discuss the proposed St. Lawrence Seaway, when the club holds a dinner meeting March 7. The meeting will be held in the Chamber of Commerce Building and will begin at 6:30 p. m.

P. R. R. Adds to Freight Handling Equipment at N. Y.

Greater efficiency in the handling of freight at the Pennsylvania's piers and freight stations in the New York metropolitan area will result from the purchase of 31 new lift trucks and 30 industrial tractors at a cost of $145,000, according to an announcement by the company.

This mechanized equipment will be added to that already in service at Piers 30, 40, 49, 50 and 52, North River, and at the 37th Street Freight Station, Manhattan, as well as at various piers and freight stations in Greenville, Jersey City, Newark, New Brunswick and Trenton, N. J.

The lift trucks, each with a capacity of 5,000 lb., and the tractors, which are to be capable of 2,200 lb. drawbar pull, will eliminate considerable double handling and generally accelerate the movement of freight between car floats and the piers. This new equipment will reduce congestion on the piers by permitting higher stacking of freight and, through faster operation, will release car floats more quickly for other trips.

N. Y. Central Gets First of New Coaches

America's first postwar-built railroad passenger car was delivered February 20 in Detroit, Michigan, by the Pullman-Standard Car Manufacturing Company to the New York Central System.

In a brief ceremony marking delivery of the new car, C. L. Jellinghaus, vice-president and general manager of the New York Central, at Detroit announced that the new coach will be placed immediately in service on the Empire State Express, operating between New York, Cleveland and Detroit. He added that 152 new cars of this series, soon to be delivered as fast as three a day, will enter service immediately after delivery to aid in carrying the present heavy passenger traffic. Later they will be grouped together to form new complete trains of harmonious design.

Interior of the New York Central's new coach which seats 64

The car is wired for installation, when available, of a public address and telephone system. This will provide means for announcing station stops, for calling attention to points of interest along the route and for intercommunication with all cars on the train.

Chicago Terminal Committee Establishes Headquarters

The Chicago South Side Terminal Committee, formed recently for the purpose of selecting a site for a proposed new railway terminal as a means of consolidating passenger facilities for 16 railroads at present using the four stations located south of the city, has established headquarters for its Engineering Committee at 166 W. Jackson boulevard, Chicago.

The organization is headed by F. G. Gurley, president of the Atchison, Topeka & Santa Fe, while R. E. Dougherty, vice-president of the New York Central, is chairman of the Engineering Committee. C. P. Richardson, on leave of absence as engineer of capital expenditures of the Chicago, Rock Island & Pacific, will serve as terminal engineer.

The four stations concerned are the Illinois Central, Dearborn street, LaSalle street and the Grand Central. The 16 railroads utilizing these terminals are as follows: Chicago, Rock Island & Pacific; New York Central; New York, Chicago & St. Louis; Atchison, Topeka & Santa Fe; Chicago & Eastern Illinois; Erie; Grand Trunk Western; Chicago, Indianapolis & Louisville; Wabash; Baltimore & Ohio; Chicago Great Western; Pere Marquette; Minneapolis, St. Paul & Sault Ste. Marie; Illinois Central; Michigan Central; and the Cleveland, Cincinnati, Chicago & St. Louis.

Railway Research at Illinois University

More than $52,000 was given to the University of Illinois last year for co-operative research on railroad subjects.

The three largest contributions in railway research during the fiscal year ending June 30, 1945, according to the annual report of the comptroller of the university, were: Association of American Railroads, for study of wheel loads, joint bars, and rail webs, $12,366; Association of American Railroads and American Iron & Steel Institute, for study of failure in rails, $18,522; and Technical Board of the Wrought Steel Wheel Industry, for steel car wheel research, $10,000. Other subjects of study included welded joints and steel brake shoes.

Maine Central Modernizes Its Timetable

A new and modernized timetable, designed to provide information in a manner which even the most inexperienced traveler can readily understand, has just been issued by the Maine Central.

In two colors, the new timetable embodies a dozen or more novel features in timetable design.

Chances of confusion in reading schedules of trains on the two routes of the road between Portland, Waterville and Bangor have been eliminated by separation of the tables. On both the routes via Brunswick

and Augusta, and also via Lewiston, the new timetable segregates the weekday and Sunday schedule. To assist passengers at Portland, Waterville and Bangor who may use either of the alternate routes the new timetable includes a condensed schedule arranged in order of departure.

The road's auxiliary highway services, performed by buses of Maine Central Bus Lines, have been gathered together on opposite pages, with an added listing of all the Maine Central's bus terminals.

Material Handling Society Meeting on "Perfect Shipping"

On March 18 at a banquet and meeting in the William Penn Hotel, Pittsburgh, Pa., the Material Handling Society, in conjunction with the Allegheny Regional Advisory Board; Freight Traffic division, Pittsburgh Chamber of Commerce; Traffic and Transportation Association of Pittsburgh; and Western Pennsylvania Motor Carriers Association, will inaugurate "Perfect Shipping Month."

Among the speakers who will address the meeting are W. P. Shepherd, assistant general traffic manager, Aluminum Company of America, and Edward Dahill, chief engineer, and Clifford Anderson, assistant chief engineer, freight loading and container branch, Association of American Railroads.

Rate Injunction Hearings End

The hearings at New York before the special three-judge court on the Eastern states' petition for an injunction against the Interstate Commerce Commission's order increasing class rates in the East and reducing them in the West and South ended on February 21, with counsel for both sides and the presiding judge indicating their intention to bring the case before the Supreme Court before its summer recess if possible. Shortly before the hearings closed the states of Kansas, Arkansas, Nebraska, North Dakota, South Dakota, Oklahoma, and Texas joined the Southern governors and the Interstate Commerce Commission in requesting the court to dismiss the petition of the Eastern states and the western railroads for a permanent injunction. (See *Railway Age* for February 23, page 413.)

Socialized Air Transport in Britain

On January 24 the House of Commons in London passed a motion approving a "White Paper" outlining the government's plan for future operation of Britain's airlines under government ownership. Under the plan all British air transport activities will be divided among three government-owned corporations as follows: Routes between the United Kingdom, other countries of the British Empire, the United States and the far east (the present "B.O.A.C."); routes within the United Kingdom, and connection with the continent; and routes between the United Kingdom and South America. The number of such government-owned corporations may be increased as warranted by demand. These corporations may participate not only in scheduled flights but in charter and air taxi service, although private individuals will be permitted to continue in the latter two activities.

While it is the British government's intention to use only British-made airplanes, it is currently being forced to buy American planes while its own industry gets into production. Airports for use by the British airline corporations, and for foreign airlines flying into Britain, will be operated by the Ministry of Civil Aviation; and the Ministry will also cooperate with the government-owned corporations and cooperate with aircraft manufacturers in determining the types of aircraft to be built.

During the discussion of the motion, a spokesman for the ministry of Civil Aviation stated that it was intended to welcome other countries into jointly owned and operated airline companies with the eventual intention of creating an international company which would be owned jointly by the countries it served; and for this reason the program, while a national plan, has been framed so that it could readily be converted to an international scope.

Construction of New "Empire Builder" Trains Under Way

Construction of the first of 60 new passenger cars which will make up the new, streamlined "Empire Builder" trains of the Great Northern for operation between Chicago and the Pacific Northwest has been started by the Pullman-Standard Car Manufacturing Company, with delivery of five complete trains scheduled for the last quarter of 1946. One of the new trains will be purchased by the Chicago, Burlington & Quincy, which operates Great Northern trains between Chicago and the Twin Cities.

The new Empire Builders will operate daily each way between Chicago and Seattle, Wash. Powered by 4,000-hp. Diesel-electric locomotives, the streamliners will run on a 45-hour schedule, approximately 13½ hours faster than at present.

Each train will consist of a combination baggage and mail car, four coaches, a lounge-grill car, one diner, four sleeping cars and an observation-lounge car. Two of the sleeping cars will have eight duplex-roomettes, four bedrooms and four open sections each. The remaining two sleepers will contain 16 duplex-roomettes and four bedrooms each. The observation-lounge car will include two bedrooms and a drawing room. Of the four coaches, one will have a seating capacity of 60 passengers and the other three will accommodate 48 persons each. They will be equipped with "Day-Nite" reclining seats and Pullman-Standard-designed leg rests.

The colors of the scenic Northwest will be featured in the decorations of the trains' interiors and murals reproduced from original drawings of Blackfeet Indians and other Indian pictures will be the motif of the panels of the observation-lounge car. The streamlined exterior will have a background of olive green. A broad window band of orange and a narrower band of orange, edged in yellow, and a stripe of silver at the car bottom will be part of the decorative scheme.

French Passenger Service Being Reinstated

The French National Railroads Administration at Paris has announced plans for the re-establishment of services discontinued by the war. Trains taking pilgrims to Lourdes and other pilgrimage points will be restored, and liaison with other European nation's railways are to be greatly increased. French-English service via Dieppe is expected soon, as is service via Calais and Dunkerque. In May, the "North Star" express will be re-established between Paris and Brussels and Amsterdam, and the "North Express" will resume runs from Paris to Calais, Amsterdam, Copenhagen, Berlin via Liege, Duisburg and Hanover. The famous "Orient Express" from Paris to Strasbourg, Stuttgart, Munich, Vienna and Prague is expected to run thrice weekly beginning about April 1.

Penn Station, N. Y., Gets an Addition

The Pennsylvania has completed a new three-story extension to the station master's office at Pennsylvania Station, New York.

Work on the project commenced May 28, 1945, under special authority granted by the War Production Board, in view of the need for room to house the station master's augmented staff, for a modern control room, and for an efficient public address

New streamlined "Empire Builder"

An artists' portrayal of the Great Northern's train which will operate between Chicago and the Pacific Northwest, cutting 13½ hours from the present running time. Five such trains are scheduled to be placed in operation in the last quarter of 1946.

system and bulletin board to inform passengers and visitors about the incoming and outgoing trains.

New techniques and materials were incorporated in this first improvement. These include such novelties in station design and decoration as fluorescent lighting, accoustical tile, fluted glass panelling, glass cloth draperies, plastic upholstery, and the extensive use of aluminum, bronze and stainless steel.

Freight Car Loadings

Loading of revenue freight for the week ended February 23 totaled 723,281 cars, the Association of American Railroads announced on February 28. This was an increase of 16,227 cars or 2.3 per cent above the preceding week, a decrease of 49,115 cars or 6.4 per cent below the corresponding week last year, and a decrease of 57,703 cars or 7.4 per cent below the comparable 1944 week.

Loading of revenue freight for the week ended February 16 totaled 707,054 cars, and the summary for that week, as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loading

For the Week Ended Saturday, February 16 District	1946	1945	1944
Eastern	138,617	152,531	153,688
Allegheny	126,452	170,364	173,783
Pocahontas	55,328	53,321	53,674
Southern	129,020	129,835	117,572
Northwestern	77,428	81,223	86,687
Central Western	120,972	125,074	120,272
Southwestern	59,237	72,355	68,562
Total Western Districts	257,637	278,652	275,521
Total All Roads	707,054	784,703	774,237
Commodities:			
Grain and grain products	51,843	43,026	50,737
Livestock	18,080	13,942	15,161
Coal	181,840	166,826	178,364
Coke	7,799	14,732	15,245
Forest products	36,318	39,767	40,526
Ore	5,412	12,542	13,127
Mdse. l.c.l.	118,332	103,269	100,676
Miscellaneous	287,430	390,599	360,401
February 16	707,054	784,703	774,237
February 9	713,240	755,632	793,181
February 2	723,135	739,556	805,714
January 26	709,130	759,625	810,890
January 19	749,475	777,572	738,650
Cumulative total, 7 weeks	5,027,049	5,283,746	5,531,832

In Canada.—Carloadings for the week ended February 16 totaled 67,395, as compared with 64,553 for the previous week and 65,999 cars for the corresponding week last year, according to the compilation of the Dominion Bureau of Statistics.

Totals for Canada:	Total Cars Loaded	Total Cars Rec'd from Connections
February 16, 1946	67,395	36,144
February 17, 1945	65,999	39,053
Cumulative Totals for Canada:		
February 16, 1946	451,058	235,881
February 17, 1945	444,329	240,117

Coal Research Extended

Directors of the Bituminous Coal Research, Inc., national research agency for the bituminous coal industry, have approved a current budget calling for an additional outlay of $401,000 in more than 40 research projects intended to improve utilization of solid fuels by railroads, industry and domestic consumers. The projects under consideration include such railroad coal uses as air supply, over-fire steam-air jets, effect of fuel on locomotive performance, and handling railroad coal.

The research organization's locomotive development committee has announced projects under way or authorized at Battelle Memorial Institute, Johns Hopkins University, Southern Research Institute, the Institute of Gas Technology, Purdue University, and the Alco Products Division of American Locomotive Company. None of these, however, is included in the general budget of $401,000 of Bituminous Coal Research, Inc. The budget for the locomotive development work, the goal of which is a coal-fired gas turbine locomotive, represents a separate allocation of funds.

Initial Hearings in Op Wage Arbitration

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utilized in eliminating much of the delay in settlement of national wage issues and in an industry that is vital to the national welfare."

E. L. Oliver, labor relations consultant and economic analyst of Washington, D. C., followed Mr. Fraser as a witness for the employees. He presented a series of exhibits on February 23 and February 25 designed to show that the rising trend of wages of railway operating employees had failed to keep pace either on a percentage basis or on a cents-per-hour basis with increases granted employees in other industries including manufacturing, city transit and highway and water transport.

In presenting his exhibits he used the full amounts of the increases granted by the 1944 Emergency Board, but sought in his testimony to exclude an amount equal to five cents an hour as being a true increase as, he said, this amount represented payment in lieu of penalty overtime for certain employees and compensation for away-from-home expenses for others. Mr. Oliver's exhibits and testimony, so far, have all related to straight-time wage rates without reference to payments for so-called extra services such as penalty payments for yard delay, compensation for station switching, and similar extras.

T. P. & W.-Union Conference Fails, Shippers Ask Receiver

The conference between representatives of the management of the Toledo, Peoria & Western and the striking employees of the road, held under the sponsorship of the Illinois Commerce Commission on February 20, ended in failure to agree on a method to arbitrate the differences.

The Commission, on February 26, released letters received from both sides outlining the conditions under which they were willing to arbitrate. George P. McNear, Jr., president of the T. P. & W., stated that he would be willing to consider arbitration on the disputed points provided the neutral arbitrator selected by the National Mediation Board was acceptable to both sides. However, the letter rejected arbitration under the provisions of the Railway Labor Act on the grounds that the National Mediation Board 'has conclusively demonstrated in our case, its subservience to the brotherhoods."

W. C. Keiser, vice-president, Brotherhood of Locomotive Firemen and Enginemen and chairman of the unions' committee, rejected the possibility of settlement "until such time as Mr. McNear recedes from the position that the strike breakers employed in 1942 will be senior and have superior rights to his employees in train and engine service prior to December 28, 1942, and that those individuals who, he alleges, were guilty of acts of violence in the strikes of 1941-42 and 1945-46 will not be permitted to return to service on the railroad with seniority rights unimpaired."

In the meantime, fourteen shippers located along the line filed a suit on February 20, in federal court in Peoria, Ill., asking that both the railroad and the striking unions be enjoined from continuing the suspension of operations, and requesting the court to appoint a receiver to operate the property.

Carnegie-Illinois Announces New Steel Prices

Following the settlement of the steel strike, Carnegie-Illinois Steel Corporation, U. S. Steel subsidiary, made the following announcement concerning increases in the prices of its manufactured steel products:

"O. P. A. maximum prices of steel products were ordered to be increased effective February 15, 1946, in an amount equivalent to $5 per ton, and the prices of the steel products manufactured by this company are similarly increased with respect to all shipments on and after that date.

"Materials shipped after February 15, 1946, will, for the present, be invoiced initially at prices existing prior to that date and revised billing applicable to the specific increases on the materials covered by any invoices (which may be more or less than $5 per ton) will be rendered as soon thereafter as possible. New price lists reflecting these changes will be published as soon as practicable."

Budd Takes Reins of Burlington-Rock Island For 5 Years

Following a meeting of the board of directors of the Burlington-Rock Island, held at Houston, Tex., recently, the following officers were elected to serve for a five-year period beginning on January 1: President, Ralph Budd, president of the Chicago, Burlington & Quincy; vice-president, C. D. Peckenpaugh, vice-president and general manager of the Fort Worth & Denver City; assistant secretary and assistant treasurer, O. D. Weaver, secretary and treasurer of the Fort Worth & Denver City; assistant secretary and assistant treasurer, Bert Vickery, assistant secretary and assistant treasurer of the Fort Worth & Denver City; assistant secretary, Edith J. Alden, assistant secretary of the Fort Worth & Denver City. The railroad, which is jointly owned by the Burlington and the Chicago, Rock Island & Pacific, is managed alternately for five-year periods by officers of these two roads.

With the Government Agencies

Wheeler Is Caustic on Revamp Process

Attacks rail trustees for not retiring debt when private management showed way

Although enactment in its present modified form of the bill to implement voluntary adjustment of railroad financial structures (S.1253), introduced by Chairman Wheeler of the Senate interstate commerce committee, was opposed by spokesmen for various parties to receivership or trusteeship proceedings now pending, in appearances by them before the committee this week, Senator Wheeler indicated no change in his previously-expressed view that the responsibilities of the courts and their receivers or trustees, particularly to junior security holders, had been so ineffectively discharged in many cases that such junior creditors, as well as equity holders of bankrupt railroad companies, are entitled to some legislative relief from the treatment given them.

As noted in *Railway Age* last week, hearings on the modified version of the bill were recessed for a week to allow parties to reorganization proceedings opportunity to develop their positions, inasmuch as roads in control of the courts had not previously been subject to the bill's provisions, but were just brought in under a proposal to require suspension of reorganizations in order to afford the owners of the properties opportunity to come to an adjustment with creditors under the other provisions of the bill, these being in many respects not unlike the terms of the so-called McLaughlin Act which expired November 1, 1945.

Senior Holders Favored—When the hearings were resumed February 26, a large number of representatives of holders of reorganization road securities were present, and a group of witnesses experienced in reorganization proceedings began extended analyses of the proposed legislation, and defenses of actions of trustees and receivers which members of the committee challenged on the ground that they were unduly preferential to the senior bondholders and unfair, in view of the large war-time earnings of many reorganization roads, to holders of junior securities and equities.

While he agreed with Senator Wheeler that trustees and receivers and the courts, in many cases, had been so intent on safeguarding the rights of senior security holders that injustices had been done other parties, Senator Reed, Republican of Kansas, asserted that the Interstate Commerce Commission is most entitled to criticism in this respect. Most of the reorganization plans approved by the commission were before it near the close of the long pre-war depression, he said, and were shaped in view of the commission's conservative appraisal of the prospects of the roads concerned in the light of their earnings in that era. Since then there had been a period of three or four or more years of very high earnings, resulting in great changes in the circumstances of most roads in bankruptcy, during much or all of which most reorganization plans were still in various stages short of consummation.

I. C. C. "Derelict"—Under these changed circumstances, said Senator Reed, the commission should have asked the courts to return the reorganization plans to it for a reappraisal of the prospects of the roads concerned. While the law did not specifically require the commission to take such action, it certainly did not forbid it, he declared, and if it needed supporting legislation it could have been obtained quickly, in his opinion. In failing to revise these plans when conditions changed, he concluded, the commission had been "derelict in its obvious duty."

As different witnesses appeared before the committee, Senator Wheeler returned again and again to his argument that prudent railroad management should take advantage of every opportunity to reduce its outstanding debt and fixed charges, and particularly to take advantage of market conditions to retire interest-bearing securities at less than their face value to the extent that their resources permit. Such procedure, he pointed out, is in the interest of all classes of security holders, senior and junior, as well as of the stockholders and the general public. He drew upon I. C. C. figures to show that most roads under private management had followed just this policy in recent years, bringing about substantial decreases in their indebtedness and substantial improvements in their credit standing. The trustees and receivers of roads in reorganization had, with few exceptions, failed to reduce their debt by this process, even though they generally had large amounts of cash available—that is, they had left these roads "in a straitjacket" while roads not in reorganization were retiring debt, a situation that "leaves a bad smell," as he put it, with the people whose investments in junior bonds or equities are being wiped out in reorganizations.

May Favor Hobbs Bill—Supplementing this contention, Senator Reed remarked that there was a "surprising" sentiment in the Senate for passage of the Hobbs bill (H.R.37), passed by the House over a year ago but never reported by the Senate interstate commerce committee, particularly because Senator Wheeler has been opposed to it. There were certain phases of the Hobbs bill that gave him and other members of the committee great concern, he went on to say, and they hoped some better alternative might be devised, but the general discontent had come to a point where the committee had to offer some sort of legislation to cor-

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Federal Aid Should Cease, Says Johnson

He tells House committee a rate level attractive to capital is essential

The statement of the National Transportation Policy, as now set forth in the Interstate Commerce Act, is adequate, but opportunity exists for legislation to remove inequities in the application of that policy, according to the statement of Col. J. Monroe Johnson, director of the Office of Defense Transportation and member of the Interstate Commerce Commission, filed by him with Chairman Lea of the House interstate and foreign commerce committee in response to the committee "questionnaire" circulated in advance of its full investigation of the present transportation situation.

One Regulatory Body—One step to make actual conditions conform more closely with the stated policy, Colonel Johnson pointed out, would be to concentrate authority to regulate all forms of domestic transportation in a single agency; if separate bodies have the duty of safeguarding and stimulating the individual forms of transportation in which they are particularly interested, without responsibility for the welfare of the other forms, only regulatory chaos can result, he suggested.

But along with such concentration of regulatory authority over all types of transportation, Colonel Johnson proposed also a "break with the past," in the form of a "definite separation of responsibilities and powers as between the quasi-legislative and the quasi-judicial on the one hand, the executive on the other." To administer requirements that are executive in nature, he proposed creation of an independent, responsible transportation authority, or department of transportation, where a coordinated and uniform program of development under the national policy could be made effective, and "much of the friction and conflict now evident among advocates of various types of transport might well be eliminated."

Centralize Promotion Too—Extending this idea, he continued: "It seems to me that agencies of the federal government should be sharply limited in their efforts to promote the interests and activities of particular types of carriers. If such promotional work is to be done, it appears that it should center in one particular government unit, such as a transportation authority: that the federal government should not, so to speak, mount its horse and ride off in all directions—Public Roads Administration, Civil Aeronautics Administration, Inland Waterway promotion, and others. Application of this broad rule may

(*Continued on page 479*)

Intransigeants Pay Visit to Mr. Truman

Whitney and A. Johnston who won't arbitrate get word in at White House

A. F. Whitney, president of the Brotherhood of Railroad Trainmen, and Alvanley Johnston, grand chief engineer of the Brotherhood of Locomotive Engineers, called on President Truman at the White House on February 21. These two unions, which have been taking strike votes with respect to their demands for wage increases and changes in working rules, refused to participate with the other railroad labor organizations in the arbitration proceedings now under way at Chicago.

Responding to questions from newspapermen as he left the White House, Mr. Whitney said that the call on the President was a "hangover" from a request he and Mr. Johnston made for an appointment several weeks ago. Asked if the strike votes had been discussed, Mr. Whitney replied that the President had been informed that the men were voting 90 to 100 per cent in favor of a walkout. He said that the disputes between the two brotherhoods and the railroads had been mentioned briefly in the talk he and Mr. Johnston had with the President.

In the course of his talk with the reporters, Mr. Whitney said "we are ready to settle with the railroads any time they are." Mr. Johnston emphasized, however, that the two unions would not agree to arbitrate their differences with the carriers. At the same time he conceded that a questioner was "probably right" in suggesting that the controversy would go through Railway Labor Act processes to an emergency board proceeding before any strike occurred.

Lea Study Resolution Cleared by Rules Committee

The House committee on rules has voted to report House Resolution 318 to the House with a rule clearing the way for expedited House consideration of the measure which would authorize the committee on interstate and foreign commerce to proceed with its "national transportation inquiry." The resolution, sponsored by Chairman Lea of the interstate and foreign commerce committee, had been pending before the rules committee since its introduction last July.

Meanwhile the interstate commerce committee has proceeded with preliminary work in connection with the investigation, including the distribution to interested parties of its "list of suggested topics" and the receipt of replies thereto.

Nashville Terminals Stationmasters Under Labor Act

The stationmaster and assistant stationmasters of the Nashville Terminals are included within the definition of employees or subordinate officials of common carriers by railroad provided in the orders of the Interstate Commerce Commission, as a result of an amendment thereto ordered by a majority of Division 3 in Ex Parte No. 72 (Sub-No. 1). The Brotherhood of Railroad Trainmen had petitioned for an interpretation or amendment of the defining order to bring these men within the meaning of section 1 of the Railway Labor Act, and the Brotherhood of Railway & Steamship Clerks had supported the petition.

The carrier, a joint property of the Louisville & Nashville and Nashville, Chattanooga & St. Louis, had contended that the 5 men holding the positions involved were officials, and particularly that the position of stationmaster included responsibility for employing persons under his jurisdiction. The division majority, Commissioners Barnard and Patterson, held, however, that the work of these men "meets the description of that of subordinate official," so far as section 1 of the act is concerned. Commissioner Miller expressed the opinion, on the other hand, that their work, duties, authority and responsibilities mark them as officials and a part of the management of the carrier.

Transport Taxes in 1945

The Bureau of Internal Revenue's report of tax collections for the calendar year 1945 showed that the tax on amounts paid for the transportation of property yielded $219,342,260, compared with $221,384,666 in 1944, while the levy on amounts paid for passenger transportation yielded $223,552,092, compared with $201,984,480.

Western Pacific Accepts Order to Extend Signaling

The Western Pacific having agreed to install an automatic block signal system from Chestnut Junction, Cal., to Stockton, the Interstate Commerce Commission, by order of Commissioner Patterson, has required that road to make such an installation before April 1, 1947, this being the result of further proceedings under the outstanding order to show cause why a block system should not be installed in this territory, noted in *Railway Age* of February 2, page 297.

First Railroad Radio Grant

Acting upon the first application for railroad radio authorization submitted pursuant to the establishment of Rules and Regulations Governing Railroad Radio Service, Part 16, the Federal Communications Commission on February 27 granted a construction permit to the Denver & Rio Grande Western for 32 new mobile units as train (end-to-end) stations in this newly established service.

Operation will be on the frequency 159.81 megacycles, with 50 watts input power to final radio stage, employing special emission for FM (telephony).

The F. C. C. announcement noted that extended experimentation has been made regarding use of railroad radio for safety purposes for several years, and many experimental authorizations have been previously issued to railroads and manufacturers, but this is the first grant since the regular railroad radio service was established by the Commission on December 31, 1945.

Many Interests Fight St. Lawrence Seaway

Railroad presentations among opposition statements heard by Senate committee

Presentations of the railroads and other interests in opposition to construction of the St. Lawrence seaway were heard at this week's sessions of the Senate foreign relations committee hearings on Senate Joint Resolution 104, which would approve the United States-Canadian agreement for development of the river. Railroad witnesses included J. M. Hood, president of the American Short Line Railroad Association, Walter J. Kelly, assistant to the traffic vice-president, Association of American Railroads, and Julius H. Parmelee, director of the Bureau of Railway Economics.

The Protagonists—As noted in the *Railway Age* of February 23, page 417, the hearings before a subcommittee headed by Senator Hatch, Democrat of New Mexico, got under way February 18 with presentations of the proponents, whose lead-off man was Dean Acheson, undersecretary of State. Among others favoring the project were Secretary of Commerce Wallace, Chairman Olds of the Federal Power Commission, mayors of cities and governors of states in the Middle West, the National Maritime Union, Lieutenant General R. A. Wheeler, chief of engineers of the Army, and the New York State Power Authority.

The subcommittee also received and inserted in the record a letter from former President Hoover, who recalled his service as chairman of the first St. Lawrence Waterway Commission when he was Secretary of Commerce in the cabinet of the late President Coolidge; and his advocacy of the project during the term of his own Presidency.

"I do not consider the construction of the waterway will injure the existing American transportation system or our ports," Mr. Hoover wrote. "The natural increase in goods movement which should take place during the long period of construction should more than compensate any diversion. . . . From an economic point of view, it could be said as an axiom that every improvement of transportation brings not only visible economic benefits but a host of invisible ones—for cheapening of transport benefits both the producer and consumer in lessening costs. I have no hesitation in my belief as to the economic value of the project."

Mr. Kelly of the A. A. R. addressed himself particularly to estimates of traffic and savings in transportation costs which have been made by the Department of Commerce. Such estimates "are exaggerated far beyond any reasonable possibility of attainment," he said, adding that this conclusion was reached after a committee of qualified traffic officers of the railroads had analyzed the Department of Commerce's reports on the project.

Optimistic Traffic Estimates—"The government department's estimates," Mr. Kelly continued, "are based on the theory that all traffic now moving or that may

move in the territory under consideration, including that moving by rail, waterway and highway, would be transferred to the proposed seaway. The department survey fails to recognize that factors other than rates affect the movement of traffic. It assumes that ships which enter the Great Lakes will make the same rates to and from such ports as Duluth and Chicago as they now make to and from North Atlantic ports, ignoring entirely some 1,500 miles of distance each way and restricted navigation as elements in the making of shipping freight rates.

"The department's survey ignores the competition of existing inland waterways which lie wholly within the United States and which are now carrying much of the potential tonnage assigned to the St. Lawrence route. It ignores also the commercial value of many combinations of rail-water, water-rail and rail-water-rail routes which use the Great Lakes and the connecting inland waterways within the United States."

On a map showing the existing waterways in the United States, Mr. Kelly pointed out that from New York to Chicago, the distance via the proposed seaway is 2,916 miles as compared with the all-water route via the Hudson river, the New York State Barge canal and the Great Lakes from New York to Chicago of 1,400 miles and the all-water route from New Orleans to Chicago of 1,534 miles.

Commenting on the more important traffic on which the department's survey estimated that the annual savings in freight costs would amount to more than $20,000,000, Mr. Kelly said:

"The department's survey estimates that 201,000 tons of automobiles and parts for export would use the seaway with potential savings in freight charges of $2,863,000 a year. This estimate is based on the assumption, which we believe to be wholly untenable, that water rates to foreign destinations would be the same from ports on the Great Lakes as from New York and Baltimore. In 1938, ten cargoes were handled through the present 14-foot channel on which the rates were 80 per cent of the rail rates from the Great Lakes to the North Atlantic ports, plus the regular ocean rates beyond. If the rates applied in 1938 were used to calculate the assumed rates, the estimated saving of $2,863,000 on export traffic would be reduced to approximately $572,000. Even this is an over-estimate because it includes assembled automobiles which would continue to move via the port of New York to take advantage of the export facilities offered by that port.

Existing Waterways — "On domestic traffic, the department's survey estimates that 359,000 tons would move on the seaway with a saving of $3,993,000 a year. So far as concerns assembled automobiles to New York, Philadelphia and Baltimore, the seaway with an all-water haul of 2,283 miles would have difficulty even to meet the competition of the lake highway routes to North Atlantic port cities. To Gulf ports (New Orleans, for example), in 1939 there were in effect rates by the barge lines operating on the Mississippi river which were lower than the rate the department assumed would apply on the seaway. The estimated saving of $3,993,000 annually on domestic traffic would not materialize."

After outlining the method of handling domestic and export grain on the Great Lakes from Duluth, Superior and Fort William-Port Arthur to the lower lake ports where it is available for sale for domestic use or for export, and where storage facilities are available to relieve the storage facilities at the upper lake ports, Mr. Kelly stated: "In my judgment, the long-established methods of handling export grain are adequate, flexible and economical. It does not seem likely that a service could be established on the seaway for domestic grain to Baltimore, Philadelphia, New York and Boston at rates low enough to compete with the water-rail routes via Buffalo or the water route via Buffalo and the New York State Barge canal."

The Short Line View — President Hood of the Short Line Association warned that completion and operation of the proposed seaway and power project would seriously jeopardize the continuing existence of a part of the railroad plant which would be indispensable in meeting any future eventualities of national defense. Reminding the committee that "it is a matter of common knowledge that the bulk of inland transportation fell upon the railroads during the past years of hostilities," Mr. Hood said that "notwithstanding some of the worst weather ever recorded, an excellent job was done in the very area of the St. Lawrence, and the necessities of the internal economy, as well as those for meeting the enemies, were discharged in a creditable manner by the railroad plant."

Mr. Hood declared that the arguments advanced over the past several years of the necessity for this project in the interest of national defense "were wholly fallacious," and he continued:

"The war just past has proved that such slow, circuitous, seasonal and limited transportation is not adapted to the fighting of a war at high tempo. In fact, all of the resources of the Great Lakes could not provide the transportation necessary in the Great Lakes system, and resort was had to the leasing of vessels from our neighbor on the north. The water transportation on the Great Lakes system was of utmost value and exceeded in volume anything heretofore contemplated. This was due to its efficiency and low cost, not just low selling price with part of the cost borne by the taxpayers."

Parmelee Testimony—Director Parmelee of the Bureau of Railway Economics asserted that the project would not be in keeping with the national transportation policy as defined by Congress in the Transportation Act of 1940. That declaration, the B. R. E. director pointed out, provides for reasonable charges for transportation services "without unjust discriminations, undue preferences or advantages, or unfair or destructive competitive practices."

"Surely the rates to be charged on the toll-free, tax-free St. Lawrence seaway would not meet this test," Dr. Parmelee declared. "They would be discriminatory in that shippers unable to use the waterway could not enjoy the subsidized rate. Undue preferences and advantages would accrue to some and not to others. The competition afforded existing agencies of transport by the subsidized waterway would be both unfair and destructive."

Pointing out that the act also calls for the development, coordination and preservation of a national transportation system adequate to meet the needs of national defense, Dr. Parmelee continued:

"The war demonstrated beyond question that railroads still are, and will remain for many years to come, the backbone of the nation's transportation system. They handled something like 97 per cent of all organized inland movements of military and naval personnel and around 90 per cent of all military and naval freight shipments. In addition, they took over the oil movement to the East when tankers were withdrawn from the Gulf-Atlantic routes and transferred to foreign service. This prevented a gasoline and fuel oil famine in the East until the two pipe lines were built and assumed part of the load.

"The railroads also took over a large part of the load normally handled by intercoastal vessels moving through the Panama canal, as well as a considerable part of the traffic usually moved in vessels other than tankers in coastwise trade. They stepped in and took over the loads of trucks forced to go out of operation due to wartime shortages.

"The war could never have been fought and won without railroad cars and locomotives, efficiently operated over our nationwide network of railway lines. Nor can the commerce of the nation at peace be adequately served in the absence of a strong railroad system. Continuing government subsidies to less efficient and less economical carriers would reduce the strength and virility of railroad transportation."

Uncle Sam a Tough Rival—Horace H. Powers, general attorney of the Central Vermont and president of the Vermont State Railroads Association, told the committee that the very essence of the existence of the Vermont railroads is threatened by the proposed seaway and power project. "There is a limit beyond which the railroads cannot go in this rivalry with the United States Treasury," declared Mr. Powers in discussing the competition that already exists through federal aid. "If the railroads in Vermont are to continue in private ownership, and if they are to give the type of service which they now render, they must have relief from competition sponsored by and at the expense of the government."

Meanwhile the railroad representatives had been preceded by Tom J. McGrath, executive director of the National St. Lawrence Propect Conference, whose presentation opened the opposition's case on February 25. Noting changed conditions since the U. S.-Canadian agreement was concluded in 1941, Mr. McGrath said that the whole matter should be reviewed and revised with both Canada and the state of New York before any definite action is taken.

The ascertainment of Canada's "present views," he went on, is particularly desirable in respect to the question of making the seaway self-liquidating by the imposition of tolls. The resolution before the subcommittee provides for an investigation into the feasibility of charging tolls; but Mr. McGrath pointed out that this study

would not be made until after the project has been authorized, and "presumably at some time during the course of construction or perhaps later."

The Matter of Tolls—"This certainly appears to be an unbusinesslike approach to this subject," Mr. McGrath contended. "What would it avail the United States if the President and the Congress should decide that tolls ought to be imposed? Unless our partner in the ownership and operation of the facilities is agreeable to the making of such charges, the will of Congress could not be made effective. If tolls sufficiently high to liquidate the cost of the project are charged, it is my belief that the waterway would attract little if any foreign commerce. But if it is a wise policy to make this project self-liquidating, and if it is practical to do so, good business judgment dictates that an understanding with Canada be arrived at respecting the subject before the agreement is ratified."

Shippers Opposed—Clare J. Goodyear, president of the National Association of Shippers Advisory Boards, expressed the opposition of that organization. One of the reasons the shipper association does not favor the seaway, he said, is that "the transportation benefits to be derived from it are of very doubtful importance and will come nowhere near paying for its cost."

Calling attention to the fact that the seaway could not possibly be open more than seven months of the year, Mr. Goodyear declared: "During the remaining five months, our railroads would have to carry the load with equipment which would otherwise be unnecessary. The capitalization of this equipment would be added to the burden of freight rates paid by other users of the railroads. The use of the canal during seven months of the year would necessitate laying off considerable railroad labor during that period which would again be needed when the burden of the traffic was transferred from the canal to the rails during the winter."

Among other opposition presentations were those made by representatives of the Lake Carriers Association, National Coal Association and other coal associations, Port of New York Authority, Cleveland Chamber of Commerce, Niagara Frontier Planning Board, Maine Port Authority, Maritime Association of the Boston Chamber of Commerce, and business and commercial interests throughout the New England states.

Additional opposition witnesses on the committee's list of scheduled appearances included representatives of the Anthracite Institute, Southern States Industrial Council, State Corporation Commission of Virginia, Tennessee Manufacturers Association, New England Council, chambers of commerce of Cincinnati, Ohio, Buffalo, N. Y., Rochester, Syracuse, and Baltimore, Md., Philadelphia, Pa., business interests, and Niagara frontier grain and elevator interests.

At a meeting of the New York State St. Lawrence Project Conference at the Waldorf Astoria Hotel, New York, on February 25, Senator James M. Mead of New York attacked the St. Lawrence project on the ground that it would compete with existing traffic arteries which were more than adequate to carry the load. Representatives of railroads, truckers, maritime interests, labor organizations, and a number of state and local officials and United States Congressmen opposing the St. Lawrence project were present at the meeting.

Wheeler Is Caustic on Revamp Process

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rect the state of affairs Senator Wheeler had described. If S.1253 was not the answer, he suggested that the Hobbs bill perhaps might be amended to remove some of its more disturbing features, then approved as a means of affording relief to parties unfairly treated in reorganization plans.

(The Hobbs bill, among other features, would set up certain standards as bases for the capitalization of companies emerging from reorganization which are considerably more favorable to old company equity holders and junior creditors than the plans approved by the I. C. C., and in addition would give the courts substantially more authority in shaping plans, as compared to that of the commission, than present statutes provide.)

Senator Wheeler's view that trustees of reorganization roads were guilty of bad management in hoarding a road's assets for the benefit of senior creditors while equities and junior creditors are "wiped out" was disputed by spokesmen for bondholders, particularly by George D. Gibson of Richmond, Va., counsel for certain groups of security holders of the St. Louis-San Francisco, the Denver & Rio Grande Western, and the Missouri Pacific, each still in process of reorganization.

Defends Trustees—It was true, as Senator Wheeler said, that "equity management" of the railroads not under court control had made a better record in retiring debt and reducing fixed charges than had trustees of roads in reorganization, Mr. Gibson pointed out, but private managements, with current interest paid and no securities in default, are free to use their roads' available funds as they see fit. Trustees of bankrupt companies are in a different position, however, he insisted. They have been put in charge of the properties for the benefit of the beneficiaries of defaulted mortgages, and the income of those properties is required by law to be held in trust for the benefit of the bonds in default. The courts could not properly authorize trustees to use funds belonging to these creditors to buy junior securities at depreciated prices, in his opinion, particularly not before an accounting to ascertain the interest of each class of creditors in the funds, a difficult and lengthy process.

But Senator Wheeler insisted that none of the rights of senior bondholders would be violated if trustees reduced the total debt of a property by buying junior securities, or even the underlying issues, at prices below par. The senior issues, as well as all others, would benefit from such debt reduction, he contended.

Mr. Gibson declared that the senator was reasoning with the benefit of hindsight, that trustees would not know future conditions, and so would be guilty of most improper conduct and of making "legally impossible" use of funds held in trust, but the committee chairman did not think such actions by trustees would be "half as improper" as allowing investments in all junior issues to be wiped out on the theory that all a road's earnings should be held for senior bonds and none for the other creditors.

Inequitable Treatment of Equities—Senator Reed commented that Mr. Gibson had not got to the point of the bill under consideration, namely, the equity holders' position in roads in that had earned very large sums during the war. Some of these roads were bankrupt while others, struggling with the same difficulties in the depression, had remained under private management. Equity holders of those in reorganization are told their holdings are of no value, he went on, while they see the equities of other roads, under private management, in a steadily improving position because their managements, unlike the trustees of the bankrupt roads, have retired debt, reduced interest charges, built up their properties, and improved their credit and their ability to withstand another period of low earning power. The committee, he explained, wants to take some action to help the victims of this inequitable situation.

Taking up another aspect of the question later, Senator Reed proceeded to point out that the railroads are going to need large amounts of new capital in the future, and that this should be obtained, so far as possible, through the sale not of fixed-interest bonds but of stock. The largest pool of private capital is in the hands of the so-called institutions, especially insurance companies and savings banks, which generally speaking are investors not in stock but in bonds. The interests of the institutional investors in the bankrupt roads have generally been well guarded by their counsel and by the trustees, while equities owned by the so-called general public have been wiped out. Yet new equity capital must be secured from the general public. If equities are always going to be wiped out in reorganizations so the institutions can be protected from loss, then the railroads are going to lose their market for equities, he went on, taking the position that both classes of investors are entitled to consideration and protection, and that under present reorganization procedures both are not now given an equal chance.

Mr. Gibson Is Sorry—Mr. Gibson agreed that it was "disheartening" to see investors in stock suffer such losses, even though they had bought after a deliberate calculation of the risks. Nevertheless, he contended that the opportunity for equity financing could be perpetuated better by issuing sound stocks than by flooding the market with paper of dubious value. Many of the so-called "widows and orphans," he declared, had long ago disposed of their stocks in bankrupt roads, taking their tax losses, and these had been bought up by speculators.

Although pressed by Senators Wheeler and Reed for comment upon these and other points which they raised, Mr. Gibson stressed the view that the modified bill under consideration at least should be fur-

ther amended so it would not apply to roads in reorganization where the court proceedings were practically completed, as in the case of the Frisco, for example. While Frisco equity holders had received no consideration in the reorganization plan, he replied to Senator Reed, because the available assets were found to be insufficient to satisfy some $115 million of bondholders' claims, the committee nevertheless should strive to salvage and make useful all the work that had put the Frisco in a position where the plan could speedily be consummated. Such a course would be a practical and direct way to end reorganizations, rather than the methods contemplated in the bill. At least it should allow exceptions where reorganizations are well along, he insisted, and he suggested possible provisions for such exceptions.

Concluding his appearance before the committee with an analysis of significant phases of S. 1253 as modified to include reorganization roads, Mr. Gibson pointed out that it was devised first to meet the needs of going concerns in need of financial readjustment. Therefore, no modification of general creditor claims or of stockholders' positions, except as they might be effected voluntarily, was contemplated. But where roads already are in bankruptcy it would be "anomalous," he suggested, to give the owners control of the adjustment of their debt, particularly when there is no limit on the time within which the adjustment must be completed. Debtors commonly find it more agreeable to talk than to pay, he observed, and he foresaw prolonged negotiations ahead of settlements.

Incentives to Speed—The only limit on negotiations, he continued, is the court's patience; it can dismiss the adjustment proceedings in case of undue delay. But the next step would be a receivership, presumably, and the bill provides that roads in receivership shall be returned to their owners while negotiations are conducted with creditors with a view to adjusting the debt, so that it would mean going through the entire procedure again, with more delay. In his opinion, a provision withholding possession of the property from the old management until after negotiations for a debt adjustment are completed would be preferable, as providing an incentive to complete the adjustment.

This proposal led Senator Wheeler to comment that trustees and receivers seemed to show no more interest in winding up proceedings under their control than Mr. Gibson had suggested private management would. In many instances, he went on, the trustees are representatives of the insurance companies, and so they have no incentive to reduce outstanding debt and fixed charges as private management would. But Mr. Gibson remarked that the old companies now bankrupt are now mere shells in many cases, without an organization to take over the management of properties long under court control, while in others the old companies are controlled by other railroads that have been accused in some quarters, at least, of being less successful operators than the strong, independent managements built up by trustees.

"Orphans of the Storm"—Before Mr. Gibson appeared before it, the committee had heard E. Stanley Glines, speaking for certain bondholders of the St. Louis Southwestern and the Chicago, Milwaukee, St. Paul & Pacific, express general approval of the proposed legislation, but with the request that the Cotton Belt be exempted from its provisions, as had been suggested previously by Walter E. Meyer (see *Railway Age* of February 23, page 415). In general, he remarked, holders of junior bonds and preferred stocks of reorganization roads had been "orphans of the storm." Referring to the Milwaukee particularly, he asserted that Leo T. Crowley and others had taken control of that property away from the owners of the road.

Enactment of the proposed legislation in a form that would apply to the Seaboard Air Line was opposed by Henry W. Anderson, a receiver of that property, who explained that its reorganization plan should be consummated by April 1, the receivership having lasted since 1930, for which reason he did not think a further delay in the proceedings desirable. But Senator Wheeler subjected the witness to extensive questioning as to why the receivers had allowed cash to accumulate without making substantial retirements of debt and so reducing interest charges, and as to why the receivers and their counsel were seeking what he called enormous fees for their services when the road's equity holders were "wiped out" while the benefits of its war-time earnings accrue entirely for the benefit of the underlying bonds, most of which were, he observed, bought on the market by speculators.

The very people who charge these fees for legal services are "doing more to destroy democracy in this country than anything else could do," the committee chairman declared, adding that it was "unconscionable" for a road in receivership to pay a "cold million" for counsel in 15 years while its stock was being 'wiped out," its high interest charges were not being cut, and its debt not reduced.

S. A. L. Cash—And he exhibited little patience with Mr. Anderson's explanation that the Seaboard's cash accumulations could not be used for the purchase of junior securities, so reducing its debt, because that cash belonged to the underlying security holders. If "incompetent courts" will not permit receivers or trustees to reduce the debt of a railroad when it has large war earnings, the committee wants to get the roads back into the hands of "intelligent management" that will do that, said the Montana senator.

Mr. Anderson also was asked to explain what Senator Wheeler called "distorted bookkeeping" by the Seaboard's receivers. Reading from a letter from Interstate Commerce Commissioner Mahaffie, the senator developed that very large charges for accruals of interest had been made in recent years, particularly in 1942, even though the receivers did not expect to pay that interest. Such accruals, though the interest is never paid, are proper tax deductions, it was noted, and they can go on so long as reorganization is pending, a situation reducing the incentive to complete reorganization proceedings. Despite these large interest charges, Senator Wheeler commented, the Seaboard in 1943 had earned $66.01 per share on its preferred stock and $5.71 on its common, although the stock does not participate in the reorganization.

Mr. Anderson explained that the large interest accruals were the result of mortgage provisions that "interest on interest" must be charged where bond issues were in default, and that the court had ruled the receivers would be liable under the mortgage contract if they did not perform that duty. While the interest was not paid, he pointed out, the road's earnings were used for betterments, where it would do the property and the public the most good. But Senator Wheeler commented that this procedure added to the value of the property for its new owners, many of them speculators in senior bonds at a "tremendous profit," but was of no use to the holders of the old preferred and common stocks, which were "wiped out."

Federal Aid Should Cease, Says Johnson

(*Continued from page 475*)

to advantage be modified, perhaps, for a brief period during the development stage of some new form of transport—such as air, though of the need of such modification there is no assurance. On the other hand, I think it may properly be said that domestic air transport is well out of swaddling clothes and in need to a progressively less degree of artificial stimulation."

As to the question of reorganizing the Interstate Commerce Commission, Colonel Johnson thought "modifications" all that would be necessary. He would give the commission regulatory authority over all domestic movements for hire by water and over all domestic air transport for hire. He would "eliminate the present overlapping of jurisdiction" on financial matters of the I. C. C. and the Securities and Exchange Commission. And he would make other changes that might be needed to make the work of the I. C. C. more effective and more flexible, while bringing about concentration in one agency of all control over domestic transportation for hire.

Competitive Rate-Making—As between different types of carriers, rate differentials are seldom warranted, in Colonel Johnson's opinion, and never "when the sole purpose is to maintain uneconomic operations." If the result of abandoning a favorable differential is disappearance of one type of carrier, leaving service by but a single carrier, "such monopoly—subject to close regulatory control—is still preferable to indefinite subsidy of uneconomic operations." Continuing, he said, "I believe that each type of carrier should be required to make effective a rate schedule based upon all legitimate costs of service; if, under rate structures so constructed, one type of carrier is able to serve at lower costs than others, the public should be permitted to benefit thereform."

Taking up the question of coordination of carrier services, Colonel Johnson advocated "a clear statutory basis" for "legitimately promulgated" orders by the government regulatory body if necessary to facilitate coordination where it is economically sound, but he added that voluntary cooperation of like types or different types

of carriers, for which no government action is essential, should be encouraged. As to the extension of common ownership over carriers of like type or of different types —"commonly termed integration"—he observed that all statutory or administrative obstacles should be "eliminated, and the way cleared for integration, subject to approval by the single regulatory body upon a clear showing of public interest." Barriers now exist, he pointed out, to rail-water integration where any competition exists; there are obstacles to rail-highway integration that make it "difficult"; and integration between air and surface carriers is "impossible" at present through "administrative policy."

The Case for "Integration"—"Because a *complete* transportation service can rarely be rendered by a single type, it seems both logical and proper" to Colonel Johnson "that the public be privileged to benefit to the fullest extent, consistent with the preservation of a reasonable measure of competition, from the integration or close coordination of transport . . . to render to the customer the complete service in which he is interested. The justification of any form of transport lies, not in its provision of independent corporate action for existing service units, but in its service to the public."

Bearing in mind federal tax policies, the operations of all types of domestic transport should be financed to the fullest possible extent through stocks or other instruments that do not impose fixed charges, said the O. D. T. director. Sound credit and adequate reserves are essential to the stability of all types of carriers, and the commission has made adequate provision for reserves for obsolescence and depreciation so far as the carriers under its jurisdiction are concerned. General reserves result from "conservative policies in the distribution of net income to stockholders. . . . The ability of the railways and other carriers to create these general reserves depends upon an adequate net income over a period of years, and this in turn depends upon the rate policies of the Interstate Commerce Commission.

"A somewhat more liberal policy by the Interstate Commerce Commission and state regulatory bodies with respect to the general levels of rates, coupled with consolidation of the carriers into systems of relatively equal strength, perhaps even limitation of dividends," said Colonel Johnson, "would assist in stabilizing carrier finance and providing satisfactory credit. . . .

Where Raise the Capital?—"The degree to which private capital will be available for investment in the for-hire carrier industry will depend upon the outlook for profits in that particular industry—more specifically, the outlook for profitable operations of the particular carrier. Such profitable operations must depend upon two factors: The general level of business activity throughout the country, and the extent to which the regulatory authority is determined that rate levels shall be maintained which 'under efficient management, rendering satisfactory service,' will yield a return sufficient to attract investment. And it should be noted that this return must not be, so long as competition is the national policy, the minimum requisite to the sale of bonds; rather, a return which will attract entrepreneurial capital."

Discussing the general question of carrier taxation, Colonel Johnson remarked that "under existing conditions, the railway is, in comparison to other types of transport, unduly burdened by policies of taxation in effect. The tax burden of the air lines is comparatively light, and the same is true with respect to domestic water transport.

"While highway interests protest vigorously against what they allege to be the heavy tax burden resting upon that industry, distinction is rarely made by the protestants between the *user* charges properly assessed against commercial highway operators through various imposts, and an actual tax. Indeed, the current movement which seems to have gained considerable acceptance, to prohibit the 'diversion' of revenues from highway users to other than highway purposes will exempt in certain jurisdictions the highway operator from the payment of any genuine tax, if tax be interpreted as a charge made to aid in meeting the general costs of government. . . . I think there is little doubt but that, among the various forms of domestic transport, the tax burden of the railways is the most onerous."

Taxes a State Matter—Inasmuch as the taxing power rests to a considerable extent in the states and their subdivisions, there would seem to be little a federal body can do to remedy inequities in carrier taxation, he went on to say, but he added the suggestion that an "interstate conference upon carrier taxation," fathered by the commission, perhaps at the instance of Congress, might develop greater uniformity among the states as to tax policies and property valuations and so minimize abuse.

Beyond the period of its initial development, said Colonel Johnson, "each form of transport should be forced to stand upon its own feet," so far as aid from the federal government is concerned. "If such action is not taken, it then becomes obviously impossible for the various forms of transport to compete upon the basis of economy and fitness." Aid in their infancy to the railways, and "doubtless" to air transport, has been justified, in his opinion, but "there is serious question as to whether federal aid to inland water transport has been justified by results; there is also serious question as to whether our problems of transport have not been complicated unduly by the continuance of aid to highway transport. . . .

"Heavy federal contributions to highway construction, with no appropriate charge levied against commercial users, heavy federal outlays for the construction of airports that are made available to commercial users without an equitable charge, heavy contributions to inland waterway development and subsidy of the Inland Waterways Corporation, with no charge assessed against the operators using such waterways, give in each case an unfair advantage.

"If the federal government is to continue its past policy of aids to certain forms of transport, the obvious step essential to restore equality of competition is to collect from the users of facilities built in whole or in part at federal expense an equitable charge. This should be applied to airports into which federal funds have gone; it should be applied to commercial users of the highway through a federal gasoline tax or some other tax that may be deemed more appropriate.

Would End "Federal Aid"—"I believe that federal aid to all types of domestic transport should cease. If federal aid to one or several types of transport is continued and not to all equally, integration upon a broad scale of the unaided with the aided offers the only equitable answer. Without this, the unaided type cannot continue indefinitely upon the basis of private ownership and operation."

The question of "interstate barriers" to commerce, "Colonel Johnson declared, "should be approached with great care." Much of the outcry against "barriers" proceeds, he said, "from the self-interest of operators adversely affected—from their eagerness to take every possible advantage." If it can be shown that there are state "barriers" to interstate commerce, the federal government probably has power to remove those inimical to the public interest, he observed, but the jurisdictional difficulties are such that state cooperation by the conference method might be desirable, followed, if necessary, by appeal to the federal courts.

Turning finally to the question of the desirability of preserving the submarginal carrier, the O. D. T. director's view was that federal support of such a carrier can be justified only where the national defense is involved. "The abandonment of the marginal or submarginal carrier for which there is an adequate substitute service, or for which adequate substitute service can be provided, should be encouraged," he declared. "Even more, such abandonment should be pressed in over-all public interest; the continued operation of such weak properties imposes an unjustified burden upon some one or several of the parties at interest."

Correction—Patterson Was With Majority in Allied Vans Case

The report on the Interstate Commerce Commission's recent decision denying common-carrier status to Allied Van Lines, Inc., which appeared in the *Railway Age* of February 23, pages 419-420, was in error in stating (in its last paragraph) that Commissioner Patterson had subscribed to Commissioner Lee's dissenting expression. Mr. Patterson, a dissenter to Division 5's prior report which the full commission has now reversed, was this time with the majority; and it was Commissioner Rogers who joined in the Lee views.

Hearing March 5 on Wheeler's T. P. & W. Resolution

Chairman Wheeler of the Senate committee on interstate commerce has set March 5 as the date for hearings on Senate Resolution 229 which he introduced recently to provide for an investigation by that committee of the controversy between the Toledo, Peoria & Western management and the railroad labor organizations (see *Railway Age* of February 23, page 417).

Meanwhile a like resolution has been introduced in the House by Representative Price, Democrat of Illinois. It is House Resolution 531, calling for an investigation of the T. P. & W. situation by the House committee on interstate and foreign commerce.

Equipment and Supplies

LOCOMOTIVES

RUSSIA has ordered 30 steam locomotives of 0-6-0 wheel arrangement from the Davenport Besler Corporation.

The POLISH SUPPLY AND RECONSTRUCTION MISSION has issued inquiries for 50 or 500 steam locomotives of 2-10-0 wheel arrangement.

The GREEK MINISTRY OF TRANSPORT is inquiring here for new steam locomotives of 2-8-0, 2-8-2 and 2-10-0 wheel arrangement. Prices have been asked for varying numbers, ranging from eight to 33, of the different types sought.

SIGNALING

The INTERNATIONAL GREAT NORTHERN has ordered materials from the General Railway Signal Company for the installation of absolute permissive block signaling on the 88.9 miles of track between Crockett, Tex., and Spring.

The FLORIDA EAST COAST has ordered materials from the General Railway Signal Company for use in providing automatic crossing protection signaling at 28 crossings in Florida. Type XA flashing-light signals equipped with reflectorized signs will be used.

Supply Trade

Allen D. Pettee has been appointed chief electrical engineer of the **General Cable Corporation.**

A. E. Ganzert, formerly engineer of shop plants and machinery of the Chicago, Rock Island & Pacific, has been appointed chief engineer of the **Mars Signal Light Company,** with headquarters at Chicago.

Arthur J. Olson, district sales engineer for the **Link-Belt Company** at Chicago, has been appointed district sales manager at Kansas City, Mo., to succeed **Max Giffey,** who has resigned after 40 years of service.

The **Pettibone Mulliken Corporation,** Chicago, has acquired control by purchase of all outstanding shares of stock of the **Beardsley & Piper Company,** manufacturers of foundry equipment. **E. J. Seifert,** president; **Chester V. Nass,** vice-president; and **E. S. Cummings, Jr.,** secretary, respectively, of Pettibone-Mulliken will assume the same positions with Beardsley & Piper, which will continue its separate corporate existence. **E. O. Beardsley** and **Walter F. Piper,** formerly the principal stockholders of Beardsley & Piper, will remain as engineering consultants.

E. R. Galvin, formerly president of the Tyson Bearing Corporation of Massillon, Ohio, has been elected executive vice-president, general sales manager and a member of the board of directors of the **LaPlante-Choate Manufacturing Company,** Cedar Rapids, Iowa.

Elmer F. Layden, who has resigned his position as commissioner of professional football, National Football League, has been appointed assistant to the president of the **Shippers' Car Line Corporation,** a subsidiary of the American Car & Foundry Co., and will be temporarily assigned to the company's Chicago office.

O. A. Rosboro, secretary of the **Vapor Car Heating Company, Inc.,** has been elected vice-president and secretary, with headquarters as before at Chicago. **Franklin E. Hess,** northwestern manager at St. Paul, Minn., has been promoted to district manager, with headquarters at Philadelphia, Pa. He will be succeeded at St. Paul by **L. A. Richardson,** formerly engineer, with headquarters at Chicago.

L. S. Gilleo has been appointed sales engineer representative in the Michigan-Ohio-Indiana territory and **L. L. McMaster, Jr.,** representative in the middle Atlantic states, for the **Dzus Fastener Company.** Mr. Gilleo formerly was associated with the Ford Motor Company at Willow Run. Mr. McMaster previously was employed with the Elastic Stop Nut Company and the Standard Pressed Steel Company.

William Van C. Brandt has resumed his former position as manager of Exide motive power sales for the **Electric Storage Battery Company,** Philadelphia, Pa., after serving in the Navy during the war. Mr. Brandt attended the U. S. Naval Academy and served during the first World War in transport service. He re-joined the Navy in 1942 with the rank of lieutenant-commander. He was the commanding officer of the U. S. S. Dover, a gunnery training ship, and in July, 1945, was assigned command of the hospital ship, U. S. S. Sanctuary, with the rank of commander. The Sanctuary was engaged in transporting Allied ex-prisoners of war from China and Japan.

Roy L. Chitwood, whose election to vice-president of the **T. J. Moss Tie Company, Inc.,** with headquarters at Ellington, Mo., was reported in the *Railway Age* of January 26, was born at Ellington on August 21, 1894, and has spent his entire business life in the timber industry. Prior to World War I he was with the Hackworth-Payne Lumber Company, Reynolds County, Mo., leaving that organization to enter the war and serve with the American Expeditionary Force in France. From the end of the war to 1926 Mr. Chitwood was in business for himself and then became associated as a partner in the Ozark Oak Flooring Company, Bismarck, Mo. In 1928 he dissolved this partnership and formed the Missouri Flooring Company at Birch Tree, Mo., becoming associated with the Moss organization three years later, operating that company's floor plant at Springfield, Mo. Later he was promoted to general superintendent of production, the position he held at the time of his election to the vice-presidency.

OBITUARY

W. Jerry King, manager of railway sales of the Hewitt Rubber Corporation, and owner of the O. K. Company, Chicago, died at Winter Park, Fla., on February 16. Mr. King was born at Chicago on November 27, 1875, and began his career with the Hewitt Supply Company. In 1915 he left this firm and went with the Hewitt Rubber Corporation, which maintains headquarters at Buffalo, N. Y. In November, 1919, he founded the O. K. Company, but retained his connection with Hewitt, with headquarters at Chicago.

Col. E. J. W. Ragsdale, chief engineer of the railway division of the Edward G. Budd Manufacturing Company, died of a heart attack on February 24. He was 61 years of age. Col. Ragsdale was born in San Francisco, Calif., and spent his boyhood in China, where his father was in the United States diplomatic service; in Flushing, Long Island, N. Y., and in Berlin, where he studied for a degree in naval architecture. He enlisted in the British army at 15 years of age while in Tientsin, China, to help quell the Boxer uprising. He was wounded and smuggled to Japan where he recovered after three months. He went to Germany in 1903 and mixed study with travel through Russia and Switzerland. He worked in a German shipyard and on a British tramp steamer to the Orient.

After a course in shipbuilding at the Massachusetts Institute of Technology, he was commissioned in the United States army in 1910. Shortly after World War

Col. E. J. W. Ragsdale

I, he resigned his commission and joined the Budd Company as a research engineer. In that capacity and later as chief engineer of the railway division, he promoted the use of four-wheel brakes for automobiles, invented the Shotweld system, which made possible Budd's varied use of stainless steel, and developed many of the design and comfort features of the streamlined stain-

less steel railroad passenger cars. Recently he was active with the company's postwar production of railroad cars. He travelled 50,000 miles on the railroads in one year to gather material and experiences helpful in his research.

John A. English, Jr., manager of Detroit sales of the Carnegie-Illinois Steel Corporation, died at Detroit, Mich., recently.

Financial

BALTIMORE & OHIO-NEW YORK CENTRAL. —*Toledo Terminal Development.*—Division 4 of the Interstate Commerce Commission has authorized the Lakefront Dock & Railroad Terminal, a new company, to issue $10,000 of capital stock (to be delivered in equal amounts to the Baltimore & Ohio and New York Central in partial settlement of advances made in connection with its organization) and to construct new facilities on the shore of Lake Erie, adjacent to Toledo, Ohio, for handling coal, iron ore and other bulk commodities in connection with lake vessel transportation. At the same time the two proprietary companies were authorized to acquire joint control of the terminal and joint trackage and user rights on its property, and to enter into appropriate arrangements with the Toledo Terminal for certain trackage rights in connection with their use of the new property. Construction of the new facilities is expected to cost some $15,000,000, for which funds will be advanced equally by the two proprietary companies; stock and bonds of the new company are to be issued from time to time to them, subject to I. C. C. approval, as reimbursements for such advances.

CHESAPEAKE & OHIO.—*Equipment Trust Certificates.*—This company has applied to the Interstate Commerce Commission for authority to assume liability for $1,750,000 of equipment trust certificates in connection with its acquisition from the General American Transportation Corporation of 200 70-ton covered hopper cars at $4,355 each and 500 50-ton hopper cars at $2,690 each.

CHICAGO, ROCK ISLAND & PACIFIC.—*Vote on Reorganization Plan.*—Division 4 of the Interstate Commerce Commission has certified to the court the results of the voting by all designated classes of creditors for acceptance or rejection of the plan for the reorganization of this road and certain subsidiary companies, under section 77 of the Bankruptcy Act, which has been approved by the commission and the court. Acceptance of the plan by votes ranging from 88.22 per cent to 100 per cent of the respective totals was reported for 9 classes of creditors, but two classes, holders of the Rock Island's convertible bonds and the Little Rock & Hot Springs Western first mortgage bonds, rejected the plan, the vote for rejection being 75.78 per cent and 80.62 per cent, respectively.

FLORIDA EAST COAST.—*Promissory Notes.* —This road has applied to the Interstate Commerce Commission for authority to issue $1,272,156 of promissory notes in connection with the acquisition of 20 stainless steel passenger train cars from the Edward G. Budd Manufacturing Company. These include 2 passenger-baggage-dormitory cars at $84,541 each; 3 dining cars at $98,076 each; 3 tavern-lounge cars at $96,936 each; 1 passenger-baggage car at $96,374; and 11 coaches at $76,877 each.

GEORGIA, FLORIDA & ALABAMA.—*Reorganization Plan.*—The Interstate Commerce Commission has received from this road a proposed plan of reorganization under which its annual requirements of $180,000, including $105,000 in fixed bond interest and $75,000 in cumulative preferred stock dividends, will be replaced by contingent charges totaling $157,500, including $78,750 in contingent interest on income bonds and a like amount in preferred stock dividend requirements (cumulative up to 20 per cent). The proposed $1,750,000 issue of 4½ per cent income bonds will be exchanged for the like amount of 6 per cent first and refunding mortgage bonds now outstanding; and a new preferred stock issue will also go to the bondholders in payment of accrued interest. Holders of the present preferred stock issues will receive the 15,000 shares of common stock of the new company, the common stock of the old company being wiped out. The plan provides that the Seaboard Air Line, which formerly operated the road under lease, shall have an option to buy 10,000 shares of the new common at $30 per share, plus interest from January 1, 1946, the effective date of the plan.

ILLINOIS CENTRAL. — *Control of Leased Lines.*—This company has applied to the Interstate Commerce Commission for authority to acquire direct control of three subsidiary companies, now operated under lease and controlled by wholly-owned subsidiary companies in the Illinois Central System, and to purchase all the stock and properties thereof. The companies which would be acquired with a view toward simplification of the system corporate structure are the Louisville, New Orleans & Texas (Arkansas), the Meridian, Brookhaven & Natchez, and the Baton Rouge, Hammond & Eastern.

MONTOUR.— *Promissory Note.*— Division 4 of the Interstate Commerce Commission has authorized this company to issue to the Union Trust Company of Pittsburgh, Pa., an unsecured 1½ per cent promissory note for $400,000 in connection with its purchase of 200 50-ton hopper cars from the Pullman-Standard Car Manufacturing Company at a cost of $2,725 each.

NEZPERCE. — *Acquisition.*— Division 4 of the Interstate Commerce Commission has authorized this new company to acquire for $25,000 the properties of the Nezperce & Idaho, consisting of a line from Nezperce, Ida., to Craigmont, 13.8 miles, abandonment of which had previously been authorized. At the new company's request, conditions were imposed for the protection of affected employees similar to those established in the Burlington case. Rehabilitation and continued operation of the road is contemplated by the new owner.

PITTSBURG COUNTY.— *New Company.*— Division 4 of the Interstate Commerce Commission has authorized the Pittsburg County Railway Corporation, a new company, to acquire the properties of the Pittsburg County Railway Company, consisting principally of an electrically-operated line from McAlester, Okla., to Hartshorne, 18.44 miles, the purpose of the sale being to comply with an order of the Securities and Exchange Commission requiring the Public Service Company of Oklahoma, owner of the old company, to divest itself of such holdings.

SOUTHERN PACIFIC.—*Sells Fifty Million in Bonds.*—Halsey Stuart & Co., Chicago, has purchased $50,000,000 of Southern Pacific first mortgage bonds of Series F at 99.52, to bear interest at 2¾ per cent per annum. This is equivalent to a basis of about 2.768 per cent per annum. The bonds are due on January 1, 1996.

UNION PACIFIC.—*Refunding.*—This company has applied to the Interstate Commerce Commission for authority to issue $81,602,000 of series C refunding mortgage bonds, due in 1990, the proceeds of which are to be applied to the retirement at 107 of an equal principal amount of series B 3 per cent refunding mortgage bonds, also due in 1990, which were issued in 1945. The interest rate on the new issue is to be determined by competitive bidding.

WYANDOTTE TERMINAL. — *Trackage Rights.*—This road has applied to the Interstate Commerce Commission for approval of an arrangement for its operation under trackage rights on a 2.5-mile line of the Detroit, Toledo & Ironton at Wyandotte, Mich.

Average Prices Stocks and Bonds

	Feb. 26	Last week	Last year
Average price of 20 representative railway stocks..	59.89	62.28	50.68
Average price of 20 representative railway bonds..	102.15	102.26	83.50

Dividends Declared

Alabama & Vicksburg.—$3.00, semi-annually, payable April 1 to holders of record March 8.

Atlanta & Charlotte Air Line.—$4.50, semi-annually, payable March 1 to holders of record February 20.

Bangor & Aroostook.—Preferred, $1.25, quarterly, payable April 1 to holders of record March 5.

Beech Creek.—50¢, payable April 1 to holders of record March 8.

Boston & Albany.—$2.00, payable March 30 to holders of record February 28.

Chesapeake & Ohio.—75¢, quarterly, payable April 1 to holders of record March 8.

Delaware & Bound Brook.—50¢, quarterly, payable March 9 to holders of record March 2.

Erie & Pittsburgh.—87½¢, quarterly, payable March 9 to holders of record February 28. (Pennsylvania State tax of 7½¢ must be deducted.)

Philadelphia, Germantown & Norristown. —$1.50, quarterly, payable March 4 to holders of record February 20.

Reading.—Second preferred, 50¢, quarterly, payable April 11 to holders of record March 21.

Union Pacific.—$1.50, quarterly; preferred, $2.00, semi-annually, both payable April 1 to holders of record March 4.

Vicksburgh, Shreveport & Pacific.—$2.50; preferred, $2.50, both payable semi-annually on April 1 to holders of record March 8.

Virginian.—62½¢, quarterly, payable March 21 to holders of record March 11.

Wabash.—$1.00; preferred, $4.50, both payable April 19 to holders of record March 30.

Abandonments

ERIE.—With this company's consent, Division 4 of the Interstate Commerce Commission, on consideration of the petition of the Railway Labor Executives Association, has modified its certificate authorizing abandonment of an Erie ferry operation in the Finance Docket No. 13569 proceeding,

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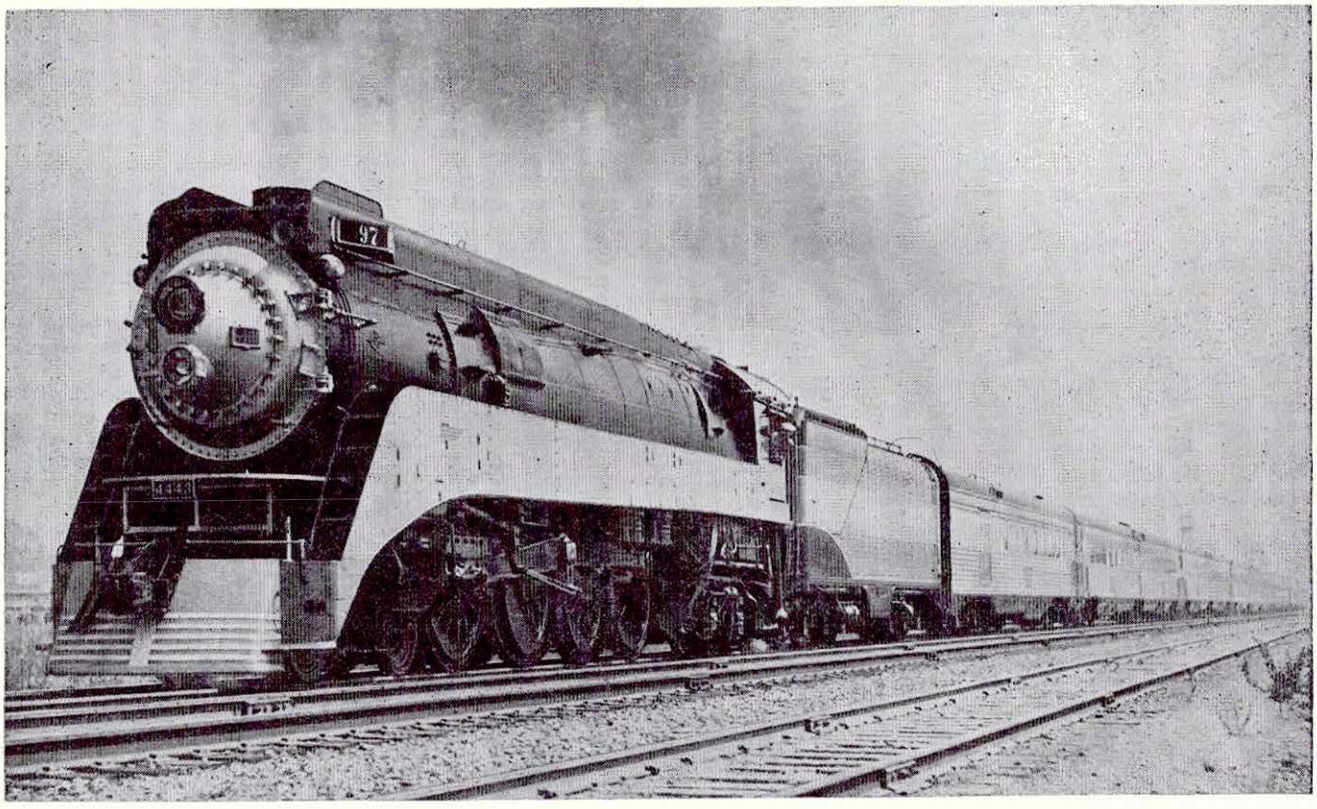


The Steam Locomotive

is a high money earner per dollar of investment

Continual advances in the design and construction of the steam locomotive have steadily increased its practical position as a high money earner in relation to its initial cost and expense of maintenance and operation.

This is further emphasized by the ability of modern steam locomotives, such as this Southern Pacific Lima-built 4-8-4, to power heavy passenger or freight trains with equal efficiency.

LIMA LOCOMOTIVE WORKS LIMA LOCOMOTIVE WORKS INCORPORATED INCORPORATED, LIMA, OHIO

issued June 19, 1942, to provide that the so-called Burlington case conditions for the protection of employees adversely affected be applied thereto.

NEW YORK CENTRAL.—On petition of employee organizations, Division 4 of the Interstate Commerce Commission has extended for a further period of two years its reservation of jurisdiction with respect to the protection of employees who may be adversely affected by this road's line abandonment authorized in the Finance Docket No. 13914 proceeding.

NEZPERCE & IDAHO.—The Interstate Commerce Commission has revoked and set aside its certificate authorizing abandonment of this entire line, from Nezperce, Ida., to Craigmont, 13.8 miles, originally issued April 12, 1944, in view of the recent authorization to the Nezperce Railroad, a new company, to acquire and operate that property, as noted in another column.

PERE MARQUETTE.—On petition of the Order of Railway Conductors and the Railway Labor Executives Association, Division 4 of the Interstate Commerce Commission has extended for a further 2-year period its reservation of jurisdiction with respect to the protection of employees adversely affected by the abandonment of a line from Remus, Mich., to Weidman, 12.99 miles.

Railway Officers

EXECUTIVE

Edwin H. Burgess, chairman of the Traffic Executive Association, Eastern territory, and of the Trunk Line Association, has been elected vice-president and general counsel of the Baltimore & Ohio at

Affiliated Photo—Conway

Edwin H. Burgess

Baltimore, Md. As general counsel, he succeeds **John J. Cornwell,** whose photograph appears elsewhere in these columns together with a biographical account of his career in railroading. Mr. Burgess was born at Columbus, Kan., on September 1, 1888, and was graduated from Pacific College (A. B., 1909), Washington State College (B. S., 1910), and the University of Pennsylvania Law School (LL. B., 1914). He entered railway service in June, 1914, as assistant to general solicitor of the Lehigh Valley, advancing to assistant general solicitor in 1922. He was named general solicitor in 1927, maintaining this position until May, 1942, when he was appointed chairman of the Traffic Executive association, Eastern territory, and of the Trunk Line Association. Mr. Burgess' appointment as vice-president and general counsel of the B. & O. became effective on March 1.

Clark Hungerford, general manager of the western lines of the Southern since 1939, has been named vice-president in charge of operation and maintenance of the Association of American Railroads, with headquarters at Washington, D. C. This appointment became effective March 1, upon the resignation of Charles H. Buford, whose election as executive vice-president of the Chicago, Milwaukee, St. Paul & Pacific was reported in *Railway Age* of February 16. Mr. Hungerford will be succeeded on the Southern by **Fred W. Okie,** who has been superintendent of that road's Birmingham division, with headquarters at Birmingham, Ala.

Clark Hungerford

Mr. Hungerford was born at Jackson, Tenn., on December 22, 1899, and attended public schools at Greenville, S. C., Porter Military Academy at Charleston, S. C., and Princeton University, where he received the C. E. degree. He entered the service of the Southern in October, 1918, as a transitman at Charlotte, N. C., where he later became a junior engineer. From 1922 to 1927 he held positions as transitman at Knoxville, Tenn.; bridge inspector, then draftsman at Charlotte; assistant engineer at Knoxville; assistant trainmaster at Asheville, N. C.; and trainmaster at Macon, Ga., and Charlotte. In October, 1927, he was made superintendent of the Mobile division at Selma, Ala., following which he was superintendent of the Georgia, Southern & Florida (Southern system) at Macon from 1929 to 1934, superintendent of the Washington division at Alexandria, Va., to 1936, and superintendent of the Birmingham division—Northern of Alabama to 1939. On August 1, 1939, he was appointed general manager of the Southern's western lines, with headquarters at Cincinnati, Ohio, which position he leaves to take the A. A. R. vice-presidency.

G. Novotny has been elected vice-president of the East St. Louis Junction, with headquarters at National Stock Yards, Ill.

F. O. Haymond, vice-president and general manager of the Bingham & Garfield, with headquarters at Magna, Utah, has retired.

L. M. Stuart, general merchandise and transportation agent of the Missouri-Kansas-Texas, has been promoted to assistant to the president, with headquarters at St. Louis, Mo.

W. S. Hackworth, assistant to the president of the Nashville, Chattanooga & St. Louis, has been elected president, with headquarters as before at Nashville, Tenn., succeeding **Fitzgerald Hall,** whose death on February 7 was reported in the *Railway Age* of February 16.

FINANCIAL, LEGAL AND ACCOUNTING

H. T. Davenport has been appointed attorney of the Great Northern, with headquarters at Spokane, Wash.

D. L. Case has been appointed general attorney of the Texas & Pacific at Dallas, Tex., succeeding **M. E. Clinton,** who has resigned.

Catherine Sullivan, has been appointed auditor, in addition to her duties as treasurer, of the Meridian & Bigbee River at Meridian, Miss.

John J. Cornwell, general counsel of the Baltimore and Ohio at Baltimore, Md., since 1922, retired on March 1, and has been succeeded by **E. H. Burgess,** whose photograph appears elsewhere in these columns, together with an account of his career. Mr. Cornwell was born in Ritchie County, W. Va., on July 11, 1867, and attended Shepherd College and West Vir-

John J. Cornwell

ginia University, and has received honorary LL. D. degrees from Maryland University, Vermont University, and West Virginia University. He entered railway service in 1900 as counsel for the B. & O., in West Virginia, later becoming division counsel, and simultaneously (during 1909-

News Department continued on next left-hand page

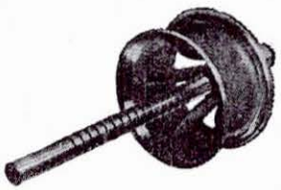
One of the latest NEW YORK CENTRAL locomotives

to have

FRANKLIN SYSTEM of STEAM DISTRIBUTION

The New York Central will soon receive a locomotive equipped with The Franklin System of Steam Distribution, but otherwise the same in construction as its Class S-1b Niagara 4-8-4 shown above.

The new locomotive is designed to be equally efficient for heavy passenger or freight service.



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1910) organizing and constructing the Hampshire Southern (now part of B. & O. System). He was elected governor of the State of West Virginia, serving from 1917 to 1921, and was elected a director of the Baltimore & Ohio in 1920. Mr. Cornwell was named general counsel in 1922. He will continue his connection with the railroad as its consulting counsel.

William M. Moloney has been appointed attorney of the Gulf, Mobile & Ohio, with headquarters at Mobile, Ala. **M. F. Wilhelm** has been appointed assistant tax commissioner at Mobile.

E. E. Sargeant, attorney of the Great Northern at Spokane, Wash., has retired. **T. J. Slattery** has been appointed assistant general solicitor at St. Paul, Minn. **G. Hartzog,** assistant general counsel at St. Paul, has resigned.

M. Eckert, whose retirement as chief accounting and financial officer of the Missouri Pacific, with headquarters at St. Louis, Mo., was reported in the *Railway Age* of February 9, was born at Columbia, Ill., on September 6, 1873, and attended business college at Belleville, Ill. He was engaged for a time as a Western Union

M. Eckert

messenger before entering railway service —in 1891 as a telegraph operator and ticket clerk at Belleville for the Louisville, Evansville & St. Louis (now a part of the Southern). In 1893, he was transferred to East St. Louis, Ill., as a telegrapher and dispatcher and a year later became chief clerk to the agent of the Southern at that point. In 1898, he went with the Missouri-Kansas-Texas as a clerk in the accounting department at St. Louis, and in 1902, he went with the Wabash in a similar capacity at the same place. He entered the accounting department of the Missouri Pacific's Gulf Coast Lines in 1908, as chief clerk at Beaumont, Tex., and became general auditor with headquarters at Houston, Tex., in 1918. Mr. Eckert was promoted to general auditor of the Missouri Pacific, with headquarters at St. Louis, on February 1, 1938 and served in that capacity until December 1 of the same year, when he was advanced to the position he held at the time of his retirement.

J. C. Gibson, whose promotion to general solicitor of the Atchison, Topeka & Santa Fe, with headquarters at Chicago, was reported in the *Railway Age* of February 9, was born at Culpeper, Va., on July 26, 1897, and received his higher education at George Washington University, Washington, D. C. From 1923 to 1930, he served as an examiner for the Interstate Commerce Commission at Washington, being a member of the valuation board of re-

J. C. Gibson

view of the Commission from 1925 to 1929, and chairman of the recapture board from 1929 to 1930. Mr. Gibson was engaged in the private practice of law from 1930 to 1934, when he entered the service of the Santa Fe as general attorney, serving at Houston, Tex., Los Angeles, Cal., and Kansas City, Mo. In 1942 he became general attorney of the Santa Fe for the state of California, with headquarters at Los Angeles, the position he held at the time of his recent promotion.

R. Glenn Calicutt, purchasing agent for the High Point, Thomasville & Denton, with headquarters at High Point, N. C., has been appointed to the additional duties of comptroller, succeeding **John F. Gannon,** who retired on January 1 after 56 years' railway service.

J. L. Montgomery, auditor of the Union at Pittsburgh, Pa., has been appointed comptroller there, while **R. W. Greenaway,** assistant auditor, has been appointed assistant comptroller, also with headquarters as before at Pittsburgh. The offices of auditor and assistant auditor have been abolished, effective February 14.

Charles H. Woods, whose retirement as general solicitor of the Atchison, Topeka & Santa Fe, with headquarters at Chicago, was reported in the *Railway Age* of February 9, was born on June 24, 1876, at Chillicothe, Ohio, and received his legal education at Ohio State University. Mr. Woods began the practice of law in 1900 at Guthrie, Okla., and in 1904 he became connected with the law department of the Santa Fe as an assistant attorney. He held this position and carried on a law practice at Oklahoma City, Okla., until 1918 when he was appointed assistant to the general counsel of the Santa Fe at Chicago. In 1920 Mr. Woods was advanced to general attorney at Chicago, and in 1933 he was promoted to the position he held at the time of his retirement.

OPERATING

W. C. FitzSimmons has been appointed trainmaster of the Chicago, Aurora & Elgin, with headquarters at Wheaton, Ill.

D. T. Ayers has been appointed superintendent of car service of the Northwestern Pacific, with headquarters at San Francisco, Cal.

R. E. Mattson has been appointed assistant general superintendent of transportation of the Northern Pacific, with headquarters at St. Paul, Minn.

H. D. Rissler has been appointed superintendent of refrigerator service of the Chicago, Rock Island & Pacific, with headquarters at Chicago.

Mark B. Van Pelt, whose appointment as terminal superintendent of the Baltimore & Ohio with headquarters at Philadelphia, was announced in the December 15 issue of *Railway Age,* was born at Clifton Forge, Va., on January 6, 1898, and entered railway service in July, 1914, at the Brunswick, Md., office of the B. & O. After serving in various clerical positions, he be-

Mark B. Van Pelt

came yardmaster in 1928, general yardmaster in 1934, and assistant terminal trainmaster in 1942, all at Brunswick. He transferred to Twin Oaks, Pa., in 1943, then went to Philadelphia in January, 1945, as terminal trainmaster, maintaining this post until his promotion in December.

C. H. Waeckerle has been appointed superintendent of transportation of the Northeast Oklahoma, with headquarters at Miami, Okla.

N. E. McKinnon, superintendent of the Bingham & Garfield at Magna, Utah, has been appointed general superintendent. **E. Culleton** has been appointed assistant superintendent.

W. J. McWhorter, acting general manager of the Nashville, Chattanooga & St. Louis, has been promoted to general manager, with headquarters as before at Nashville, Tenn.

R. G. de Leon has been appointed superintendent of telegraph and electricity of the Southern Pacific of Mexico, with headquarters at Guadalajara, Mexico. **I.**

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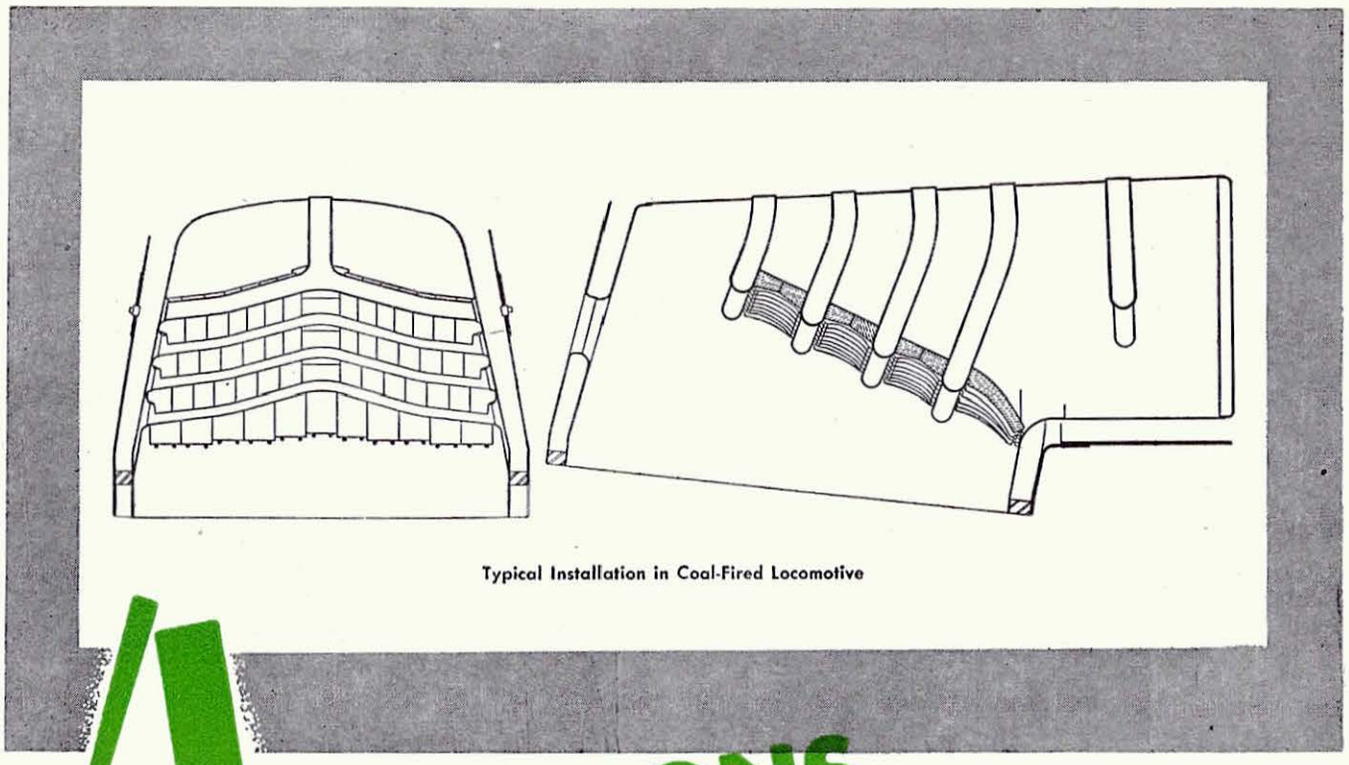

Typical Installation in Coal-Fired Locomotive

4 REASONS for installing SECURITY CIRCULATORS

1. ***Security Circulators*** furnish unexcelled support for the brick arch in the firebox.
2. ***Security Circulators*** reduce honeycombing and cinder cutting.
3. ***Security Circulators*** improve the circulation within the boiler.
4. ***Security Circulators*** aid in maintaining maximum boiler output.

Any one of these reasons justifies the installation of Security Circulators — *altogether* they mean a decided increase in Locomotive Availability.

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SECURITY CIRCULATOR DIVISION

C. Flores has been appointed superintendent at Mazatlan, Mexico.

J. E. Davis, comptroller and assistant general manager of the Meridian & Bigbee River, has been appointed general manager, with headquarters as before at Meridian, Miss. The office of comptroller has been abolished.

Charles K. Faye, assistant to the general manager of the Western Pacific at San Francisco, Cal., has been appointed manager of perishable freight service, with the same headquarters, succeeding **J. W. McClymonds,** who has retired.

B. H. Decker, who has been on leave of absence to serve in the armed forces, has returned to his post as superintendent of the Salt Lake division of the Denver & Rio Grande Western, with headquarters at Salt Lake City, Utah, replacing **K. L. Moriarty,** whose appointment as assistant chief engineer is reported elsewhere in these columns.

F. W. Okie, superintendent of the Southern at Birmingham, Ala., has been appointed general manager of the Western lines, with headquarters at Cincinnati, Ohio, succeeding **Clark Hungerford,** whose election as vice-president, operations and maintenance, of the Association of American Railroads is reported elsewhere in these columns.

S. S. Brooks, general superintendent transportation of the Southern with headquarters at Knoxville, Tenn. ,has been appointed superintendent at Bristol, Va., succeeding **W. L. King,** who retired on March 1 after more than 55 years of service. **F. M. Hair,** superintendent at Knoxville, succeeds Mr. Brooks as general superintendent transportation there, while **B. L. Stanfiel,** superintendent at Asheville, N. C., has been transferred to Knoxville. **T. R. Good,** assistant superintendent at Knoxville, has been promoted to superintendent at Asheville, succeeding Mr. Stanfiel, and **A. W. St. Clair,** trainmaster at Atlanta, Ga., succeeds Mr. Good as assistant superintendent at Knoxville.

J. D. Fraine, whose retirement as superintendent of the Kenora division of the Canadian Pacific, with headquarters at Kenora, Ont., was reported in the *Railway Age* of February 9, was born at St. Thomas, Ont., on January 22, 1881, entered railroad service in June, 1904, as a trainman-conductor on the Canadian Pacific at Medicine Hat, Alta., and served in that capacity until 1916, when he was promoted to trainmaster at Nelson, B. C. In 1917 Mr. Fraine was transferred to Calgary, Alta., and in 1918 he was appointed terminal trainmaster at the same place. He was advanced to superintendent at Calgary in 1925 and was transferred to Revelstoke, B. C., in 1926. In 1929 he became superintendent at Kenora, the position he held at the time of his retirement.

TRAFFIC

J. F. Hourigan, general freight agent of the Central of New Jersey, has been appointed assistant freight traffic manager, with headquarters as before at New York, succeeding **A. B. Craig,** who has retired. **Edward Keil,** general Eastern and foreign freight agent at New York, succeeds Mr. Hourigan as general freight agent there.

J. E. Large has been appointed general agent of the Texas & Pacific, with headquarters at Los Angeles, Cal.

H. H. Gibson has been appointed foreign freight traffic manager of the Gulf, Mobile & Ohio at Mobile, Ala.

B. F. McCoy has been appointed assistant general freight agent of the Missouri & Arkansas, at Fort Wayne, Ind.

S. E. Ramage has been appointed district passenger agent of the Illinois Central, with headquarters at Louisville, Ky.

Gordon D. Briggs, whose appointment as assistant general counsel of the Bangor & Aroostook with headquarters at Bangor, Me., was announced in the *Railway Age* of February 9, was born on August 24, 1912, at Pittsfield, Me., and was graduated from Bowdoin College (A.B., 1933) and Harvard Law School (LL.B., 1936). In 1936 he was appointed assistant counsel for

Gordon D. Briggs

the Bangor Hydro-Electric Company and subsidiaries and the Penobscot Transportation Company, and was advanced to general counsel for these companies in 1940. In October, 1942, Mr. Briggs joined the United States Army, later serving in European campaigns, and was discharged in December, 1945, with the rank of captain. His appointment as assistant general counsel became effective January 28.

J. A. W. Smith, district freight agent of the Canadian National at Sherbrooke, Que., has retired after 47 years' service.

E. M. Stevenson, commercial agent of the Northern Pacific, has been promoted to foreign freight agent, with headquarters as before at Seattle, Wash.

L. L. Tomme has been appointed district freight and passenger agent of the Southern Pacific, with headquarters at Shreveport, La.

C. B. Moore, whose promotion to general auditor of the Missouri Pacific, with headquarters at St. Louis, Mo., was reported in the *Railway Age* of February 9, was born at Boonville, Mo., on December 5, 1883, received his higher education at William Jewell College, entered railroad service in September, 1903, as a clerk in the local freight office of the Missouri Pacific at St. Louis, and served in various minor positions until June, 1906, when he became traveling timekeeper in the me-

C. B. Moore

chanical department. From October, 1909, to June, 1912, he was chief accountant in the construction department, and from July, 1912, to April, 1918, chief clerk in the engineering department. In May, 1918, Mr. Moore was appointed assistant auditor of disbursements in the accounting department, and in August of the same year he was advanced to auditor of disbursements, with headquarters as before at St. Louis, the position he held at the time of his recent promotion.

L. B. Stanton has been appointed general freight agent, solicitation, of the Chicago, West Pullman & Southern, with headquarters at Chicago.

James H. Kelley, commercial agent for the Southern, has been appointed district freight and passenger agent with headquarters as before at Gainesville, Ga.

John R. Bruton, soliciting freight agent of the High Point, Thomasville & Denton, has been promoted to assistant general freight agent at High Point, N. C.

William A. Nelson, Jr. has been appointed general agent of the Illinois Terminal, with headquarters at Chicago, succeeding **E. F. Bliss,** assigned to other duties.

H. E. Weiser has been appointed general agent, passenger department, of the Missouri Pacific at Kansas City, Mo. **R. H. Le Pell** has been appointed district passenger agent at Wichita, Kan.

R. L. Millard, assistant general passenger agent of the Denver & Rio Grande Western at Denver, Colo., has retired, as has **N. J. Browne,** general agent at Grand Junction, Colo.

H. T. Culp, general agent of the St. Louis Southwestern at Pine Bluff, Ark., has been transferred to Texarkana, Tex., succeeding **John R. Gunter,** who has retired after 57 years of service. **R. D. Klein,** general agent at Cleveland, Ohio,

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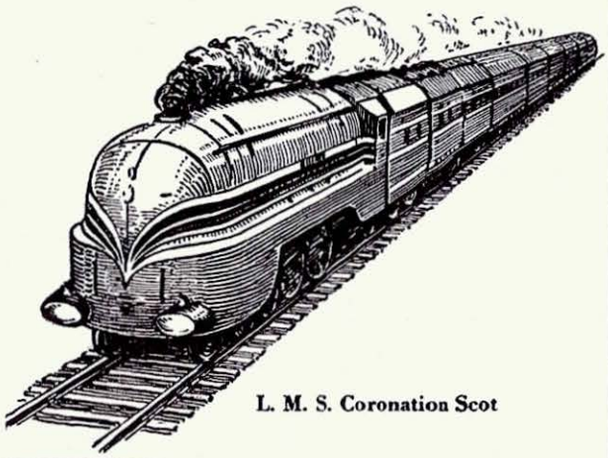
WORLD-WIDE



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has been transferred to Nashville, Tenn., where he replaces **S. D. Swan,** who in turn has been transferred to Pine Bluff, relieving Mr. Culp.

E. G. Gallagher has been appointed general agent of the Illinois Northern, with headquarters at Detroit, Mich. **E. C. Schumann** has been appointed general agent at Louisville, Ky.

H. F. Sexworth has been appointed general agent of the Boston & Maine, with headquarters at Detroit, Mich., succeeding **E. N. Mayer** whose promotion to general freight agent was reported in the *Railway Age* of February 2.

Frank A. Murphy, assistant general freight agent of the Maine Central at Portland, Me., has been appointed general freight agent there, succeeding **Charles K. Hall,** who has resigned to assume the presidency of the Passamaquoddy Transportation Company at Eastport, Me. Mr. Murphy was born on October 30, 1889, at Calais, Me., and began his railway career

Frank A. Murphy

there in 1908 as baggagemaster for the Maine Central. Except for a period of service in the United States Army during World War I, he held posts in the stations at Calais and Skowhegan, Me., until 1924, when he was advanced to traveling freight agent at Bangor, Me. In 1930, he was promoted to general agent at Presque Isle, Me., transferring to New York in 1931, where he remained until his appointment as assistant general freight agent at Portland in 1936. Mr. Murphy assumed his new duties on February 19.

R. F. Schwehm has been appointed district passenger agent of the Great Northern, with headquarters at Chicago, succeeding **S. M. Farrell,** whose promotion to general agent, passenger department was reported in the *Railway Age* of January 19.

R. S. Lawrence, district freight and passenger agent of the Denver & Rio Grande Western, at Provo, Utah, has been promoted to general agent, with headquarters at Salt Lake City, Utah. **S. D. Burnside** has been appointed district freight and passenger agent at Provo, succeeding Mr. Lawrence. **C. J. Dombrow,** general agent, passenger department, at Salt Lake City, has been appointed assistant general passenger agent, a change of title. The position of general agent, passenger department, has been abolished.

George W. Dobbin, whose appointment as eastern freight traffic manager of the Pittsburgh & West Virginia at New York was announced in the January 19 issue of *Railway Age,* was born at Baltimore, Md.,

George W. Dobbin

on January 24, 1909, and entered railroad service with the Baltimore & Ohio in 1930. He served in the general offices of the B. & O. at Baltimore until 1933, when he resigned to join the Pittsburgh & West Virginia as chief clerk to general agent at Philadelphia, Pa. He went with the New York, Chicago & St. Louis in 1935, retaining his former title and headquarters. Returning subsequently to the Pittsburgh & West Virginia, as general agent at Chicago, Mr. Dobbin was transferred to Baltimore in 1938, where he remained until his promotion on January 1.

L. E. Vinson has been appointed division passenger agent of the Atchison, Topeka & Santa Fe, with headquarters at Long Beach, Cal. **G. W. Cox** has been appointed industrial agent at Topeka, Kan.

H. J. Riggert has been appointed assistant traffic manager of the Denver & Rio Grande Western, with headquarters at Salt Lake City, Utah, succeeding **W. C. Howe,** who has retired after 41 years of service.

A. C. Berg, who has been on leave of absence to serve in the armed forces, has returned to the Great Northern as assistant to the western traffic manager, with headquarters at Seattle, Wash., succeeding **L. W. Jager,** who becomes assistant industrial agent at Seattle.

L. J. Kelly has been appointed traffic manager, solicitation, of the Green Bay & Western; Kewaunee, Green Bay & Western; and Ahnapee & Western, with headquarters at Green Bay, Wis. **O. C. McWilliams** has been appointed general agent at Detroit, Mich.

J. E. Clark, assistant general freight agent of the Pere Marquette, at Chicago, has been promoted to assistant freight traffic manager, with the same headquarters, succeeding **John A. Hewitt,** who has retired after 54 years of service. **B. N. Maier,** general agent, with headquarters at Green Bay, Wis., has been advanced to assistant general freight agent at Chicago, replacing Mr. Clark. **A. G. Hay** has been appointed general agent at Green Bay, relieving Mr. Maier. **C. A. Carlson** has been appointed general agent, with headquarters at Minneapolis, Minn., succeeding **H. F. Walter,** who has retired after 50 years of service.

J. C. Harms, whose promotion to freight traffic manager—rates, of the Pere Marquette, with headquarters at Detroit, Mich., was reported in the *Railway Age* of February 2, was born in Chicago on November 21, 1887, and entered railway service on April 19, 1904, as a messenger and clerk in the freight traffic department of the Pere Marquette, at Chicago. In 1911 he was promoted to traffic representative, and in 1919 he was appointed commercial agent. In 1927 Mr. Harms was advanced to assistant general freight agent, with headquarters at Detroit, Mich., and four

J. C. Harms

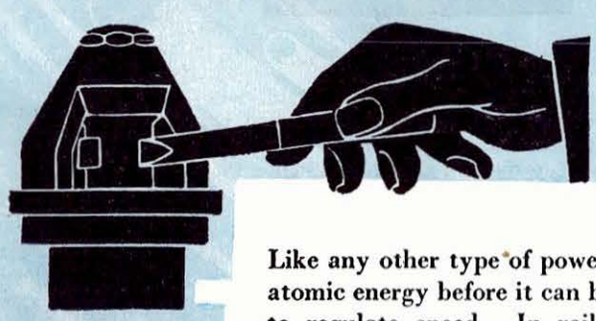
years later he was promoted to general freight agent. On March 1, 1939, he was appointed assistant freight traffic manager at Chicago, and on May 1, 1945, he was transferred to Detroit, the position he held at the time of his recent promotion.

R. E. Coleman, whose promotion to passenger traffic manager of the Baltimore & Ohio, with headquarters at Chicago, was reported in the *Railway Age* of February 16, was born at McLean, Ill., on November 13, 1902, and entered railroad service in July, 1922, as a clerk and stenographer in the passenger department of the Baltimore & Ohio at Washington, D. C. He became chief clerk in September, 1923, traveling passenger agent on May 1, 1925, city passenger agent on February 16, 1927, and division passenger agent on February 1, 1934. On October 1, 1936, Mr. Coleman was transferred to Philadelphia, Pa., as division passenger agent, and on September 25, 1941, he was advanced to general passenger agent at New York, the position he held at the time of his recent promotion.

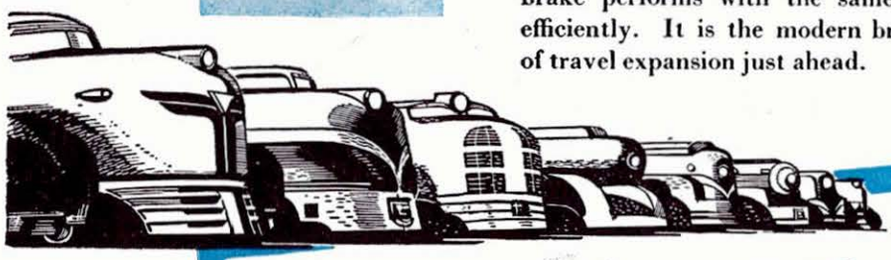
V. B. Gilman, whose promotion to freight traffic manager of the Texas & Pacific, with headquarters at Dallas, Tex., was reported in the *Railway Age* of February 9, was born at St. Paul, Minn., on

News Department continued on next left-hand page

Atomic Power! How will it be Braked?



Like any other type of power, means must be found to control atomic energy before it can be utilized. Control implies ability to regulate speed. In railroading this means air brakes—whether the power is electric, steam or diesel, or maybe atomic. Regardless of the type of power the "HSC" electro-pneumatic brake performs with the same high fidelity—smoothly and efficiently. It is the modern brake with a place in the period of travel expansion just ahead.



WHAT OF TOMORROW?

Passenger cars being planned today can be fortified for the future by providing the complete "HSC" electro-pneumatic brake equipment. It meets the ever-increasing urge to improve schedules.

Electro-pneumatic—improves schedules with flexibility and smoothness

Speed Governor Control—for control of high braking forces

"AP" Decelostat—for anti-wheel sliding protection

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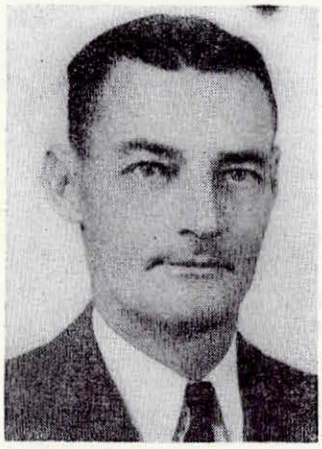
Wilmerding, Pa.

January 17, 1890, entered the service of the Texas & Pacific in 1913 as a clerk at Dallas, and served in various minor capacities until 1917, when he entered the armed forces. In 1920 he returned to the Texas & Pacific as traveling freight agent at Chicago. One year later he was transferred to Pittsburgh, Pa., returning to Chicago in the latter year as assistant general agent. Mr. Gilman became general agent at Kansas City, Mo., in 1922, and was transferred to Chicago in 1925. In 1940 he was promoted to assistant general freight agent at Dallas, and five years later, in 1945, to general freight agent at the same place, which position he held until the time of his recent promotion.

ENGINEERING & SIGNALING

C. H. Burks, whose appointment as assistant chief engineer of the Seaboard Air Line with headquarters at Norfolk, Va., was announced in the February 2 *Railway Age,* was born at Natural Bridge, Va., on January 20, 1906, and was graduated from



C. H. Burks

Georgia School of Technology (B. S., civil engineering). He entered railroading with the Seaboard in 1933 as a bridge engineer on the Georgia division, later transferring to Hamlet, N. C., as assistant to the division engineer. Mr. Burks served at Savannah, Ga., and Atlanta, as master carpenter, then, in March, 1944, was promoted to division engineer at Savannah, maintaining this position until his recent advancement.

R. M. Nall, senior transitman on the St. Louis Southwestern at Pine Bluff, Ark., has been promoted to valuation engineer, with headquarters at St. Louis, Mo.

K. L. Moriarty, superintendent of the Denver & Rio Grande Western at Salt Lake City, Utah, has been appointed assistant chief engineer, with headquarters at Denver, Colo.

C. J. Rist, whose retirement as engineer, maintenance of way, of the Pere Marquette, with headquarters at Detroit, Mich., was reported in the *Railway Age* of February 2, entered railroad service on July 1, 1891, as a clerk in the division engineer's office of the Erie, and served successively on that road as rodman, levelman, transitman, division assistant engineer, office engineer in the general office, supervisor of track, and division engineer until May 31, 1913, when he entered the service of the Pere Marquette as assistant engineer of maintenance at Detroit. Mr. Rist was promoted to divi-

C. J. Rist

sion engineer on March 18, 1917, with headquarters at Saginaw, Mich., and ten years later, on April 1, 1927, he was advanced to the position he held at the time of his retirement.

F. J. Bishop, engineer maintenance of way of the Toledo Terminal at Toledo, Ohio, has been appointed chief engineer of the Akron, Canton & Youngstown at Akron, Ohio.

W. A. Spell, whose appointment as engineer maintenance of way of the Atlantic Coast Line, with headquarters at Atlanta, Ga., was announced in the *Railway Age* of January 26, was born on November 21, 1882, at Aurora, Tex. He entered railway service in 1906, in the

W. A. Spell

engineering department of the Atlanta, Birmingham & Coast, rising to the position of chief engineer with headquarters at Atlanta, Ga. Mr. Spell was holding this position prior to his appointment as engineer maintenance of way, Western division, of the A. C. L., effective January 1.

Arthur H. Chapman, whose retirement as assistant chief engineer of the Virginian at Norfolk, Va., was announced in the *Railway Age* of February 23, was born at Staffordshire, England, on January 4, 1881. He entered railroading in 1905 as a draftsman for the Virginian at Norfolk, Va. There he was advanced to architect in 1909, to assistant engineer in 1918, and then to office engineer in 1920. Mr. Chapman was appointed assistant chief engineer in 1931. His retirement from this post became effective on February 1.

T. M. von Sprecken, whose promotion to chief engineer maintenance of way and structures, Eastern Lines, of the Southern, with headquarters at Charlotte, N. C., was reported in the *Railway Age* of February 2, was born at Augusta, Ga., on August 7, 1893, received his higher education at the University of Georgia, entered railroad service in June, 1914, as a levelman on the Southern, and served as transitman and masonry inspector until 1917, when he entered the armed forces. He returned to the Southern in 1919, and served in the construction and maintenance departments as draftsman, designer and assistant engineer until 1928, when he became resident

T. M. von Sprecken

structural engineer at Lexington, Ky. In 1931 Mr. von Sprecken was appointed assistant engineer in the office of the chief engineer at Washington, D. C., and in 1937 he was promoted to assistant bridge and building supervisor at Birmingham, Ala. He became bridge and building supervisor at Somerset, Ky., in 1938, and in 1939 he was advanced to engineer of bridges, Western Lines, with headquarters at Cincinnati, Ohio, the position he held at the time of his recent promotion.

Ray Stephens has been appointed engineer maintenance of way of the Toledo Terminal, succeeding **F. J. Bishop,** whose resignation to join the Akron, Canton & Youngstown as chief engineer is reported elsewhere in these columns.

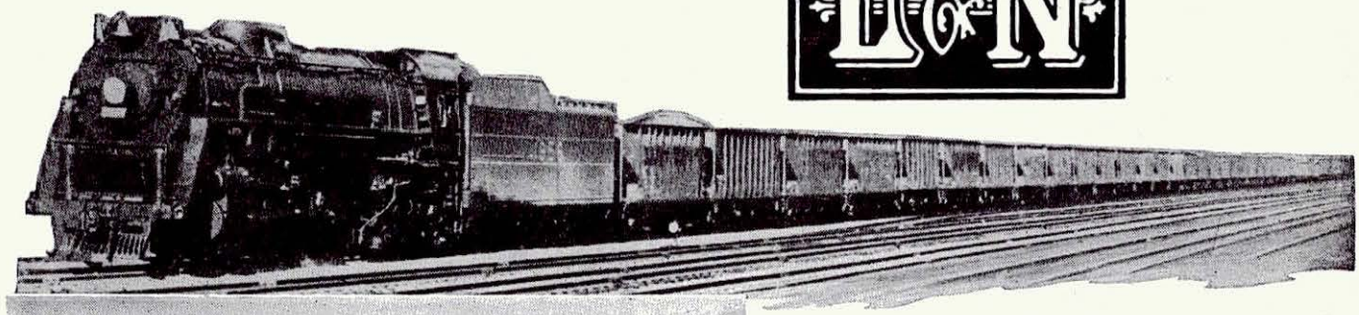
H. J. Bogardus, assistant chief engineer on the Pere Marquette, at Detroit, Mich., has been promoted to chief engineer, with the same headquarters, succeeding **H. A. Cassil,** who has retired after more than 45 years of service. A photograph and sketch of Mr. Bogardus appeared in the *Railway Age* of March 10, 1945.

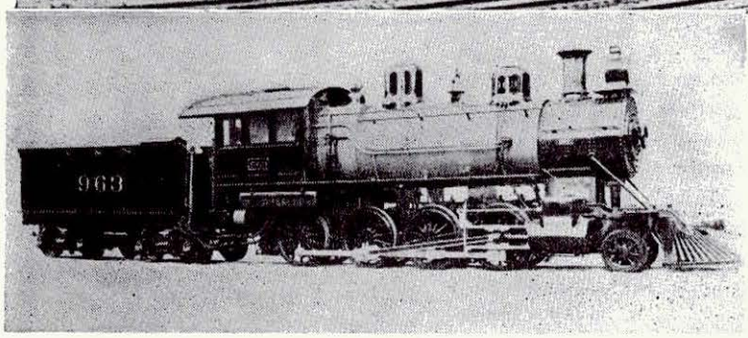
N. B. Reardon, whose retirement as engineer of bridges of the Canadian Pacific at Montreal, Que., was announced in the *Railway Age* of February 9, was born in

News Department continued on next left-hand page

In Use on the

L&N





From St. Louis and Cincinnati to New Orleans, engines like this were hauling freights on the L & N around 1910.

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Today's locomotives are changed from those of yesterday; that makes noteworthy the fact that HSGI vital parts have met the L & N's requirements for more than a generation. Equal satisfaction is yours when you specify the HSGI parts listed below.

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Valve Packing Rings	Light Weight Valves	Sectional Packing)
Valve Bull Rings	Cylinder Liners and Pistons	Cylinder Snap Rings
	for Diesel Service	Valve Rings, All Shapes

Brooklyn, N. Y., and went to Canada in 1912 to join the Canadian Pacific as a civil engineer. In 1914 he was advanced to assistant superintendent of building construction, and in 1917 to assistant engineer of buildings. Mr. Reardon was promoted to engineer of buildings in 1937. His retirement from this post became effective on January 31.

L. H. Laffoley, whose appointment as engineer of buildings for the Canadian Pacific at Montreal, Que., was announced in the February 9 issue of *Railway Age,* entered the service of the C. P. R. as a draftsman in 1919 after two years over-

L. H. Laffoley

seas service during World War I. In 1926 he was advanced to assistant engineer, and became assistant engineer of buildings in 1938, serving in the latter post until his advancement on February 1.

MECHANICAL

E. R. Hanna, who has been on leave of absence on account of sickness, has returned to the Missouri Pacific as master mechanic, with headquarters at Nevada, Mo.

L. C. Bowes, engineer of shop plants and machinery of the Chicago, Rock Island & Pacific, has been appointed electrical engineer, with headquarters as before at Chicago, succeeding **A. E. Ganzert,** who has resigned to become chief engineer of the Mars Signal Light Company of Chicago.

L. C. Kirkhuff, assistant superintendent motive power of the Virginian at Princeton, W. Va., has been appointed superintendent motive power there, succeeding **G. T. Strong,** who has retired after 36 years' service. The office of assistant superintendent motive power has been abolished.

Peter Kass, whose retirement as superintendent of the car department of the Chicago, Rock Island & Pacific, with headquarters at Chicago, was reported in the *Railway Age* of February 16, was born at Antwerp, Belgium, on August 11, 1879. Coming to this country at an early age, he completed his high school education in 1894, became an apprentice in the shops of the Pullman-Standard Car Manufacturing Company, and rose to the position of chief mechanical inspector. In 1912 Mr. Kass entered the service of the Rock Island as general foreman in the car department at Chicago, and served in that capacity until July 1, 1924, when he was advanced to superintendent of the car department, with the same headquarters, which position he held at the time of his retirement. Mr. Kass was active in the mechanical division of the A. A. R., and served as a member of the committee on prices.

H. M. Vise, foreman, car department, of the Chesapeake & Ohio at Newport News, Va., has been appointed general car inspector, Huntington and Hinton divisions (except Hinton proper), with headquarters at Huntington, W. Va., succeeding **B. J. Rucker,** whose promotion to chief car inspector at Richmond, Va., was announced in the January 19 *Railway Age.*

PURCHASES AND STORES

A. M. McHenry has been appointed purchasing agent and storekeeper of the Gulf, Colorado & Santa Fe, with headquarters at Cleburne, Tex.

Leo Unwer, in addition to his duties as storekeeper, has been appointed purchasing agent of the Missouri & Arkansas at Harrison, Ark.

SPECIAL

O. R. Diamond has been appointed superintendent of safety of the Kansas City Southern, with headquarters at Shreveport, La.

T. M. Davis has been appointed assistant to the president of the Rio Grande Motor Way, a subsidiary of the Denver & Rio Grande Western, with headquarters at Denver, Colo.

Mason Brown, recently released from the armed forces, has returned to the Gulf, Mobile & Ohio as chief special agent, with headquarters at Mobile, Ala., and Jackson, Tenn., succeeding **C. H. King,** who has retired.

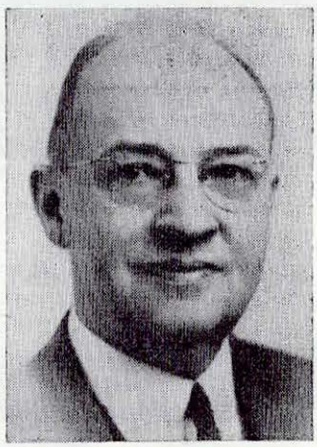
Byron S. Harvey, Sr., president of the Fred Harvey Company, has been elected chairman of the board of directors. He will continue as chief executive officer of the company. **Byron S. Harvey, Jr.,** vice-president, has been elected president, succeeding his father, and **Daggett Harvey,** a graduate attorney who was recently discharged from the United States Navy with the rank of commander, has been elected vice-president, replacing Mr. Harvey, Jr.

OBITUARY

Albert T. Mason, who retired as assistant to the freight manager of the Southern Pacific, with headquarters at New York, in August, 1945, died on February 18.

Henry Emmett Smith, district engineer of the Canadian National at Montreal, Que., whose death there on January 15 was noted in the *Railway Age* of February 9, was born in Ottawa, Ont., on May 4, 1894, and was graduated from McGill University (B. Sc. in civil engineering, 1917). He joined the Canadian National as instrumentman at Ottawa in 1917, soon leaving to enlist in the C. E. F. during World War I. He returned to the Canadian National as assistant engineer at Montreal in 1919, and progressed through various engineering posts until he was appointed acting district engineer at Montreal in September, 1944. He became district engineer there in December, 1944.

Harry W. Jones, chief of motive power of the Pennsylvania at Philadelphia, Pa., died at his home there on February 23. Mr. Jones was born at Northumberland, Pa., on December 30, 1884, and entered railroading in 1903 as a machinist ap-



Harry W. Jones

prentice in the Sunbury, Pa., shops of the Pennsylvania, advancing to assistant enginehouse foreman there in 1908, and to enginehouse foreman at Renovo, Pa., in 1911. He served as shop inspector and as general foreman at various points from 1912 until 1917, when he became assistant master mechanic at Wilmington, Del. From 1918 to 1929 he was master mechanic at Sunbury, Renovo, and Altoona, Pa., successively, advancing to superintendent motive power, Western Pennsylvania division at Pittsburgh, Pa., in 1929. In 1930 he became general superintendent motive power, central region, at Pittsburgh, then in 1933 general superintendent at Indianapolis, Ind., transferring to Harrisburg, Pa., in 1937. Mr. Jones was named chief of motive power on February 1, 1941.

B. R. Kulp, chief engineer of the Chicago & North Western, with headquarters at Chicago, died at his home in Evanston, Ill., on February 27.

Bert E. Terpning, who retired in 1938 as general superintendent of the Chicago & North Western, died at his home in Mt. Prospect, Ill., on February 23.

Douglas Swift, vice-president and general counsel of the Delaware, Lackawanna & Western, with headquarters at New York, died at his home in Maplewood, N. J., on February 16, at the age of 63. He had served the railroad for nearly 40 years.

Clive C. Handy, retired general attorney of the New York Central at New York, died on February 16 in White Plains, N. Y. Aged 72, he had been in railroad service since 1910, and had held the post of general attorney for the N. Y. C. from 1929 until his retirement in 1943.

Adjustment Board Decisions

The First Division of the National Railroad Adjustment Board has handed down decisions in 12 cases, involving 3 railways. Abstracts of these cases follow:

Grand Trunk Western vs. B. of L. E. (five cases), *Sidney St. F. Thaxter, Referee. Award No. 10609, Docket No. 19286.* Senior engineer, not working, on extra board at Detroit, Mich., claimed a minimum day at the work train rate of pay because yard engine and crew were used for 6 hr. 10 min. to unload gravel within yard limits of Detroit terminal, a rule in the contract providing that when work train service of less than 60 days' duration is required at any terminal, the job will not be advertised over the seniority district but will be manned by employees from the extra board at the terminal where the work is being performed. The referee did not sustain the carrier's claim that this rule was only for the purpose of determining what extra employees were required and did not define work service, holding that performance of the task in question was work service and therefore properly belonged to employees on the extra board at Detroit.

Award No. 10613, Docket No. 12293. In this case a train operating from Milwaukee Jct. (Detroit), Mich., to Nichols (Battle Creek) was required to make an intermediate stop at Pontiac, a station where yard engines were operated, for the purpose of setting out and picking up cars. It was the practice to stop at the east end of the yard and leave that portion of the train consisting of the caboose and unclassified cars standing on the main line, proceeding westward about one mile where a stop to take water was made and a block of through cars was cut-off the rear and left on the main line in order to permit the Pontiac cars, which were the third block from the caboose in the original train (the blocks in order being: Unclassified, Elsdon, a point beyond Pontiac, and Pontiac) to be set out in the west end of the yard then return to the Elsdon block which was left standing on the main track near the water column. While this work was being performed a yard switch engine was assigned to classify the cars next to the caboose, add the Pontiac pick-up and shove the train up the main track to a joint with the rear of the Elsdon block. It was the contention of the employees, which was sustained by the referee, that leaving a portion of the train on the main track at the east end of the yard and another on the main line near the water column at the west end, in addition to making a set out, constituted yard switching for which they should be compensated on the basis of eight hours' pay at yard rates.

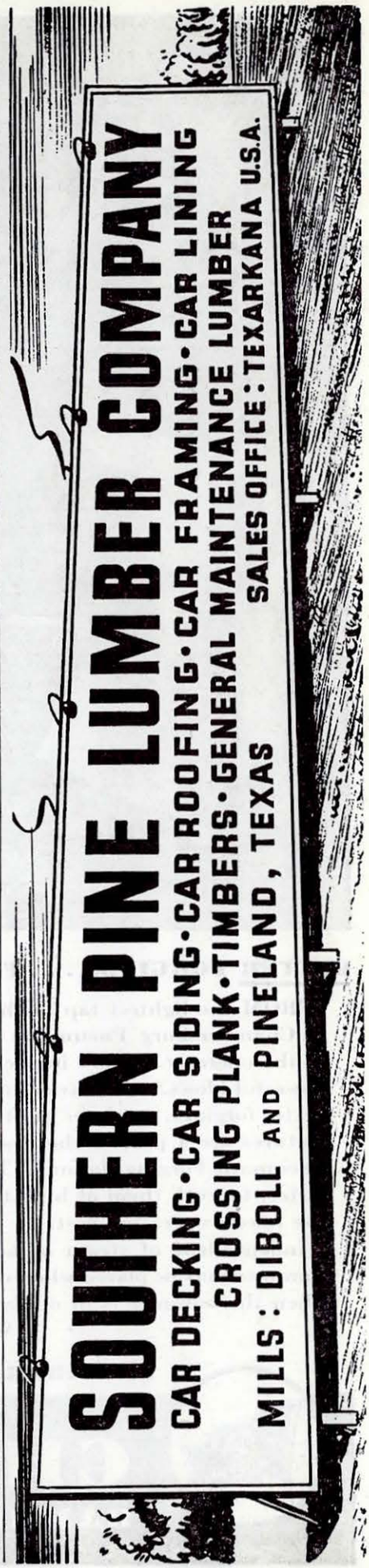
Award No. 10610, Docket No. 19289. In this case the crew of a work train which had been tying up at Durand, Mich., was instructed to return to Durand, exchange engine 3741 for engine 2672 and continue to Port Huron, which was a designated terminal for unassigned crews. Durand was not such a terminal, but, under the provisions of a rule permitting work trains to tie-up at any intermediate point on the subdivision, had been used as the going-off-duty point for several days. Upon arrival at Durand on the day in question the crew placed engine 3741 on the roundhouse track, which had on the previous nights been the tie-up point, and signed the rule book as having completed their trip, then took engine 2672 and proceeded to Port Huron with only the caboose, as instructed. Previously engine 2672 had been run out of Battle Creek, the home terminal, by this crew when it was assigned to this work service. After being in work service a few hours, this engine became disabled and it was taken to Durand for repairs where another engine was secured. Engine 2672 remained at Durand until the date in question, when it was ordered moved to Port Huron in the manner described. For this service the employees claimed an additional day at through freight rates. The claim was sustained.

Award No. 10611, Docket No. 19292. Claim by engine crew for one day's pay at yard rates for handling caboose at final terminal from point where it was cut-off train on main track to caboose track was denied by Referee Thaxter on the grounds that this handling was not instructed by the carrier and was performed solely for the benefit of the train crew.

Award No. 10612, Docket No. 19291. A claim for three days' pay at yard rates to the engine crew of a mixed train for switching merchandise cars from the freight house at the initial terminal into their train was sustained on the grounds that in acting in accord with signals given by the train crew, the engineman had received proper authority for the move. It was admitted that these particular moves were directed by the conductor without authority from the management in order to avoid waiting for the yard engine to perform this switching.

In a dispute between the *Maine Central* and the *B. of L. F. & E., Award No. 10647, Docket No. 19351, Sidney St. F. Thaxter, Referee,* claims for one day's pay at flagman rates were presented for various firemen for alleged performance of flagmen's duties, such duties consisting of closing an angle cock after their engine had ceased pushing a train it was helping, protecting a road crossing, and acting as emergency flagman in the event the engine became disabled (which latter event did not occur). A regular flagman was assigned to this pusher job but was left at the yard limit board to provide protection for the return move. The claim was denied.

Awards were made in six disputes between the Wheeling & Lake Erie and the B. of R. T., no referee being required to reach a decision in any of these cases. In *Award No. 10655, Docket No. 13157,* the division refused to set aside the discipline, viz., 10 days' suspension from service, assessed by the carrier against a yard foreman for responsibility in connection with an accident at Toledo, Ohio. In another discipline case (*Award No. 10654, Docket No. 13137*), the division ruled that three yard helpers at Canton, Ohio, should be paid for time lost while suspended from service from November 18 to December 17, inclusive, 1940, for alleged violations of carrier's rule 234, stating that during the course of the original hearings held on November 18, 1940, and the subsequent appeal hearing on December 2, 1940, no evidence was introduced proving guilt. The division added that such evidence was produced on March 5, 1941, subsequent to the time the suspension ended.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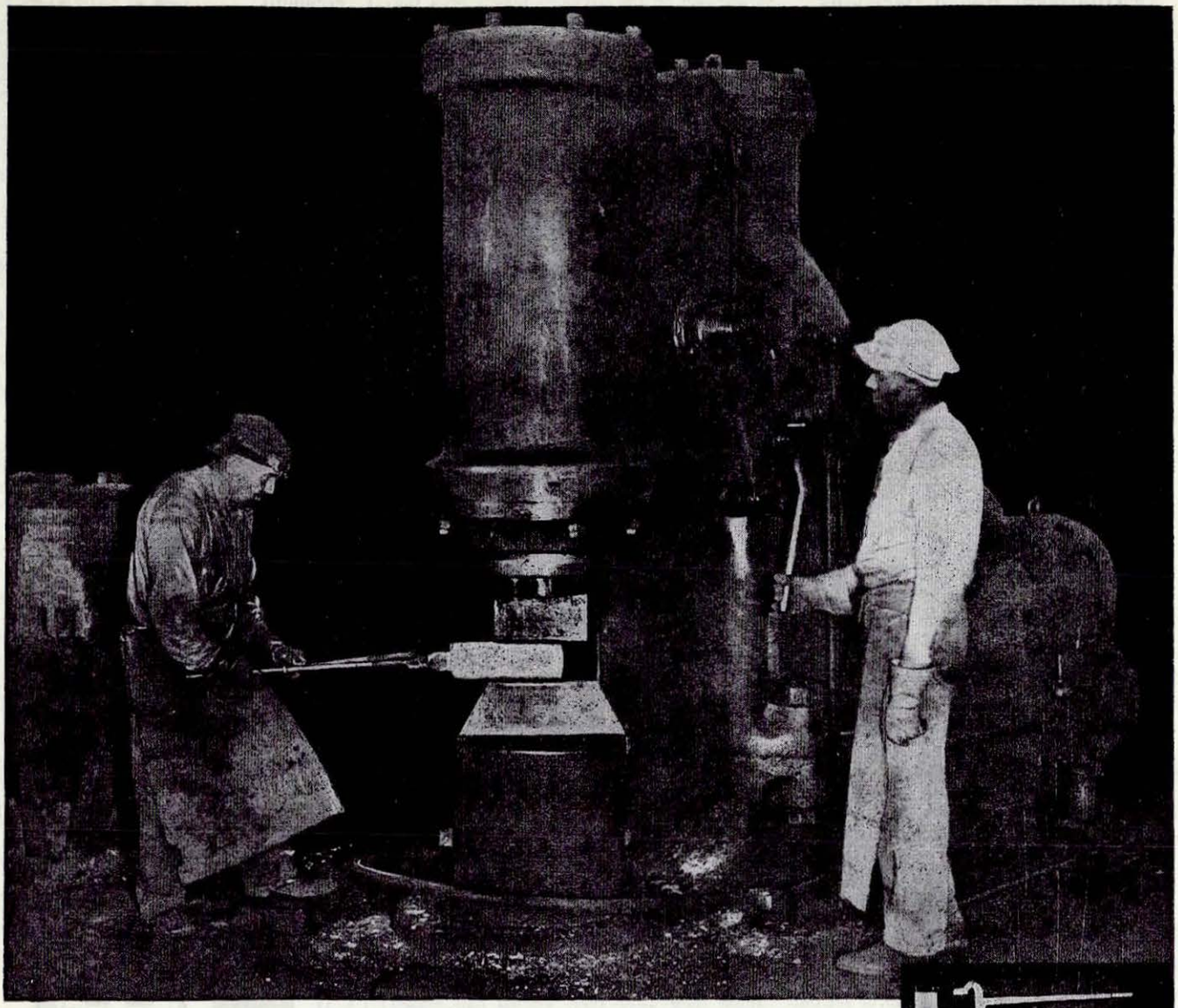

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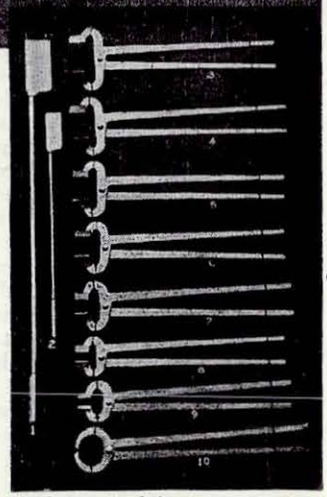

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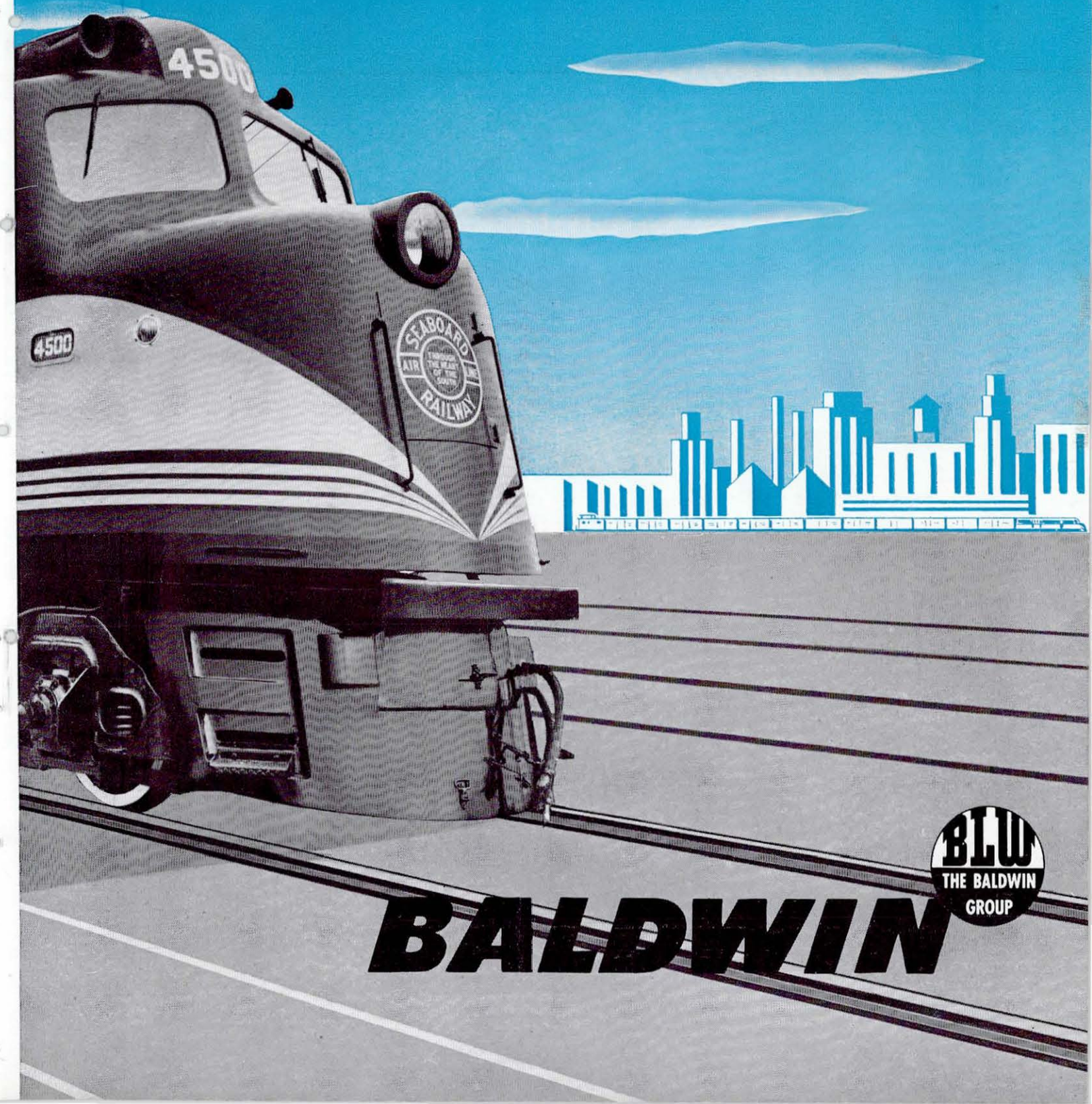
Electric Locomotive



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• After being poured, coupler castings move from the molding conveyor to this rough chipping conveyor, on which gates and fins are chipped as the castings move, to reduce production time.

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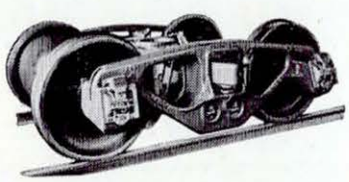
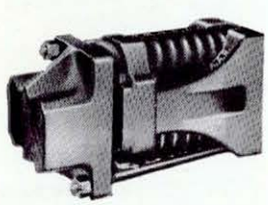


National B-1 Trucks with Dual Control pay for themselves because of safety, lightness, easier riding and reduced maintenance costs.



National M-17A Draft Gears have proved their ability to stand up under exceptionally heavy freight service. We know of no National Gear of this type that has ever worn out.

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Sales Offices: New York, Philadelphia, Chicago, Richmond, St. Louis, San Francisco.
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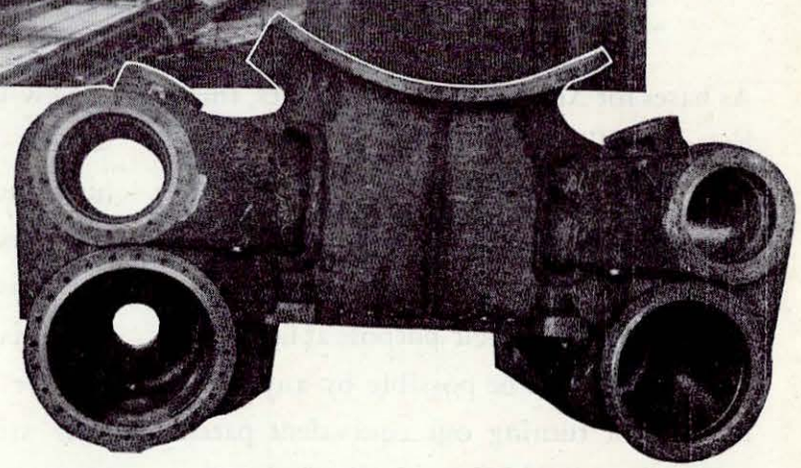

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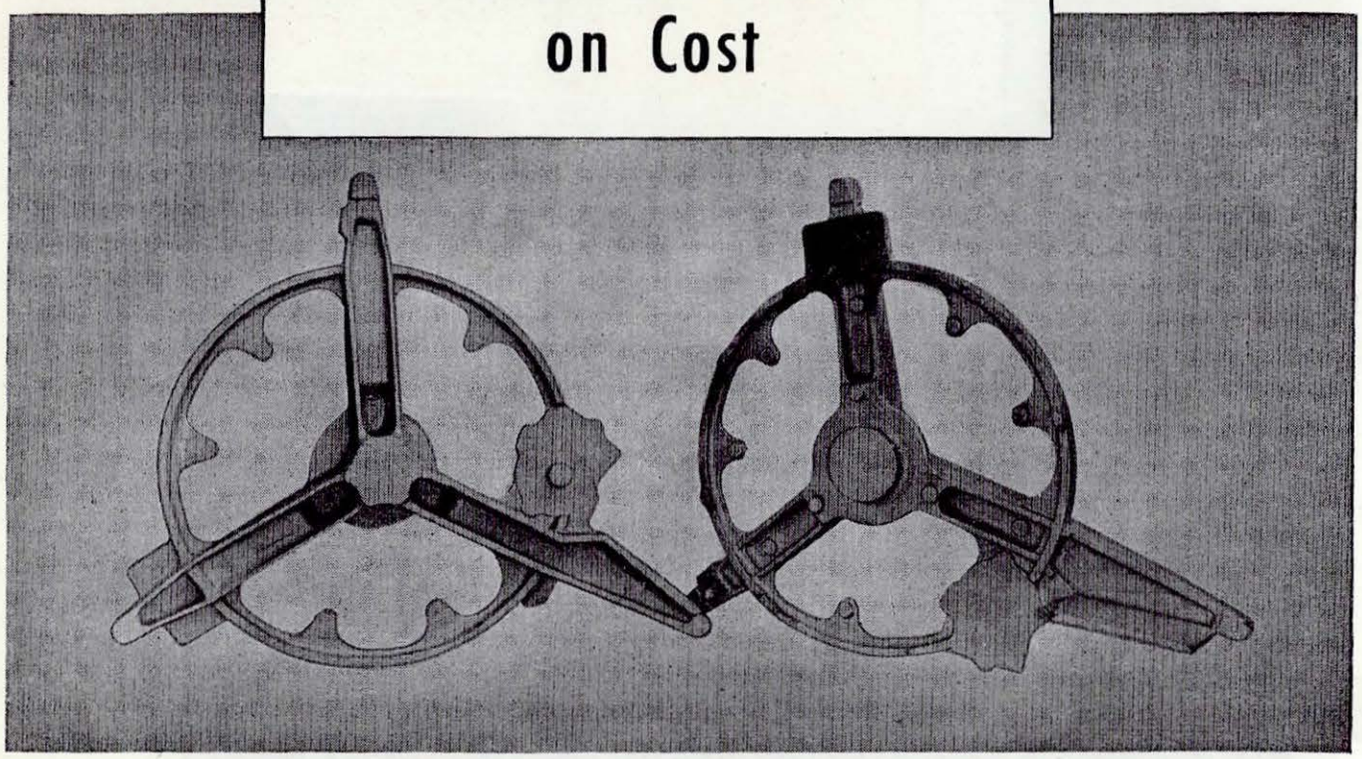

THESE CASTINGS THROW LIGHT—TWO WAYS

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As complicated alloy steel castings, they throw new light on cost of production, for they accomplish their purpose at far lower cost than would be possible by any other method of turning out equivalent parts.

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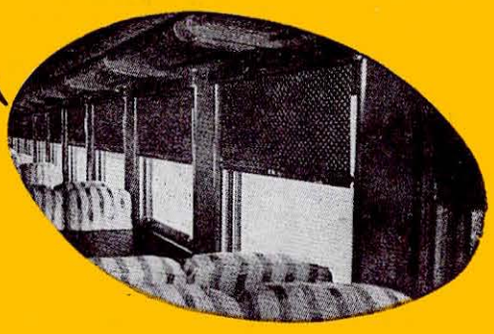

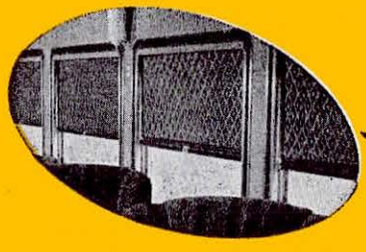

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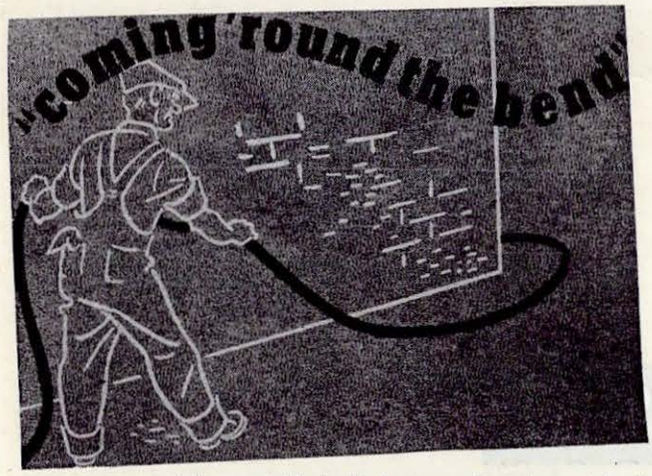

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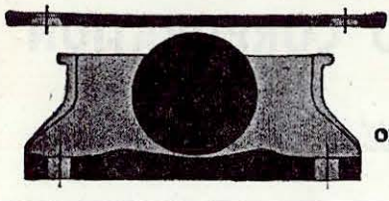

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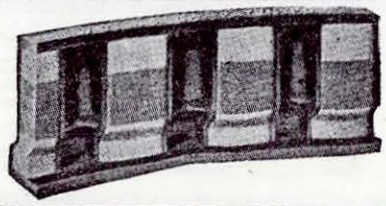

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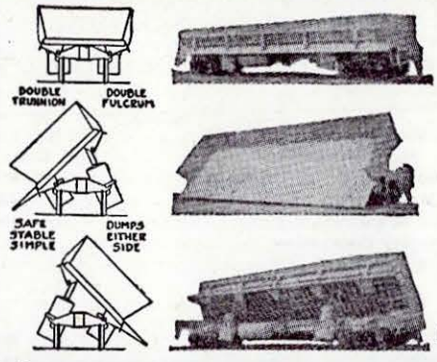

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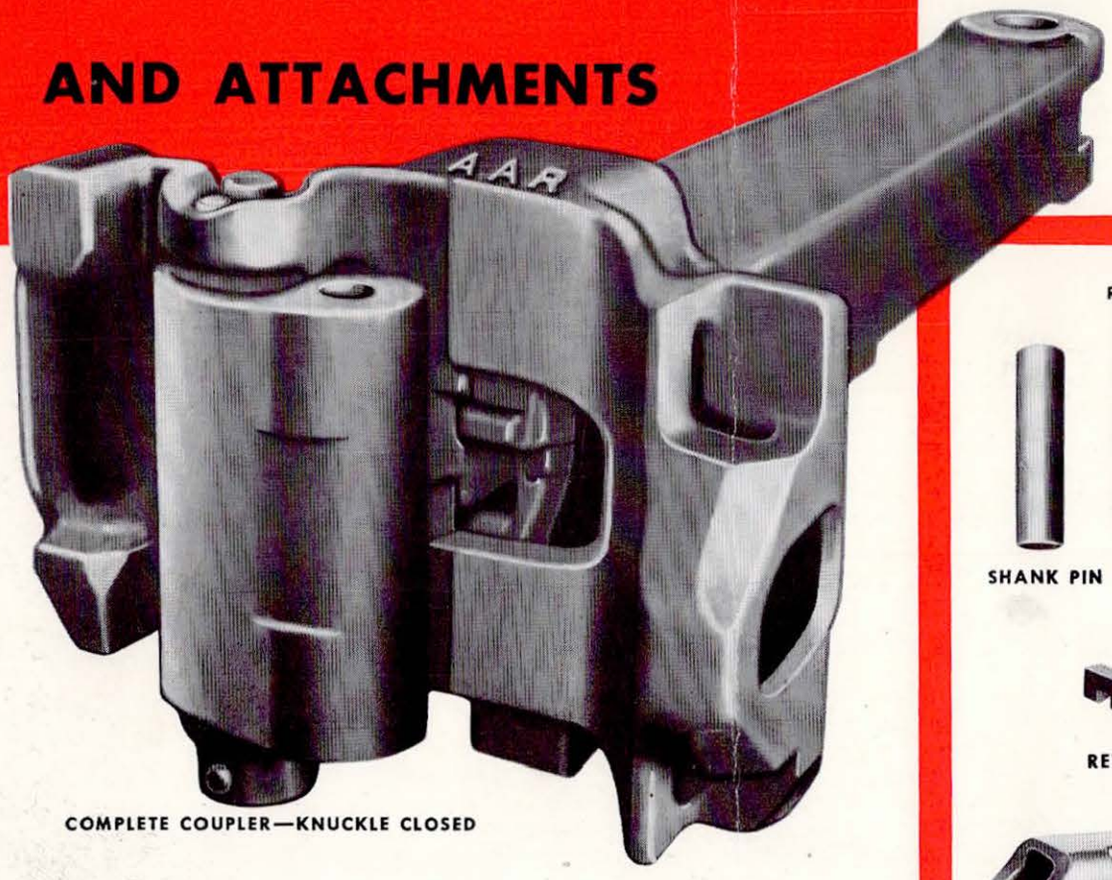

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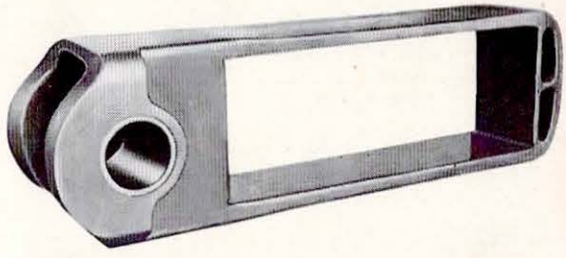

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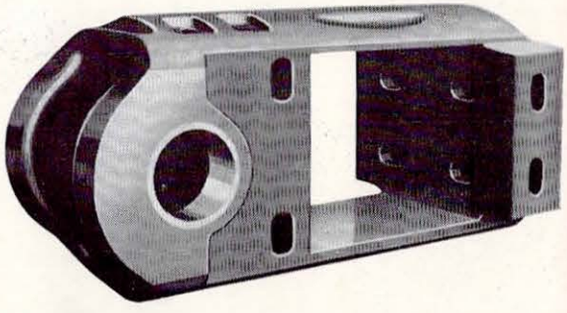

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Saved— 15 Train-hours a day

One large railroad is saving 15 train-hours daily through the use of 9 spring switches equipped with G-R-S Type A Facing-Point Locks. Sixteen other roads are putting an end to time-table speed restrictions with similar installations.

G-R-S Type A Facing-Point Locks are available for installation with any existing switch stand, switch spring or buffer—for any type of layout. Contacts (up to 4) in any desired combination of normally open and normally closed make possible a wide variety of signal indications to fit almost any operating condition.

Savings possible through application of spring switches, equipped with G-R-S Type A Facing-Point Locks, can be calculated *in advance*. G-R-S engineers are ready to study your conditions and plan applications to put these savings into effect on your road. There is no obligation.

Just write or call our nearest district office.

General Railway Signal Company

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